Regulation of PFAS

Overview and Purpose

- **Provide an overview of the PFAS problem**
- **Review the existing environmental laws relevant to PFAS regulation**
- **Discuss ways that Tribes can exercise their sovereignty by adding PFAS to their regulatory programs**

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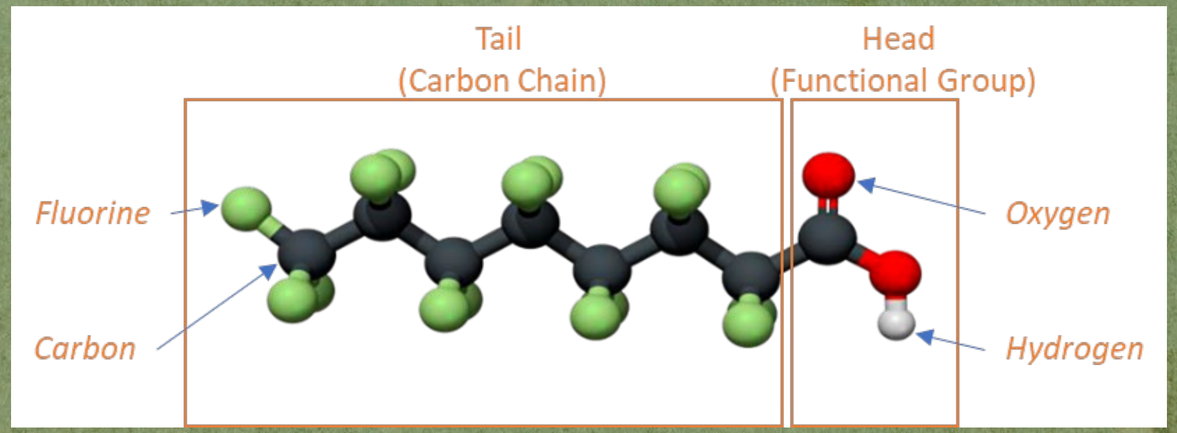
Introduction

- **A family of ~12,000 synthetic compounds in widespread use since 1930s.**
- **Initially used as part of industrial process, now also used in firefighting foams, water, and stain-proofing, non-stick coatings.**
- **These compounds are ubiquitous in the environment (and in the population).**



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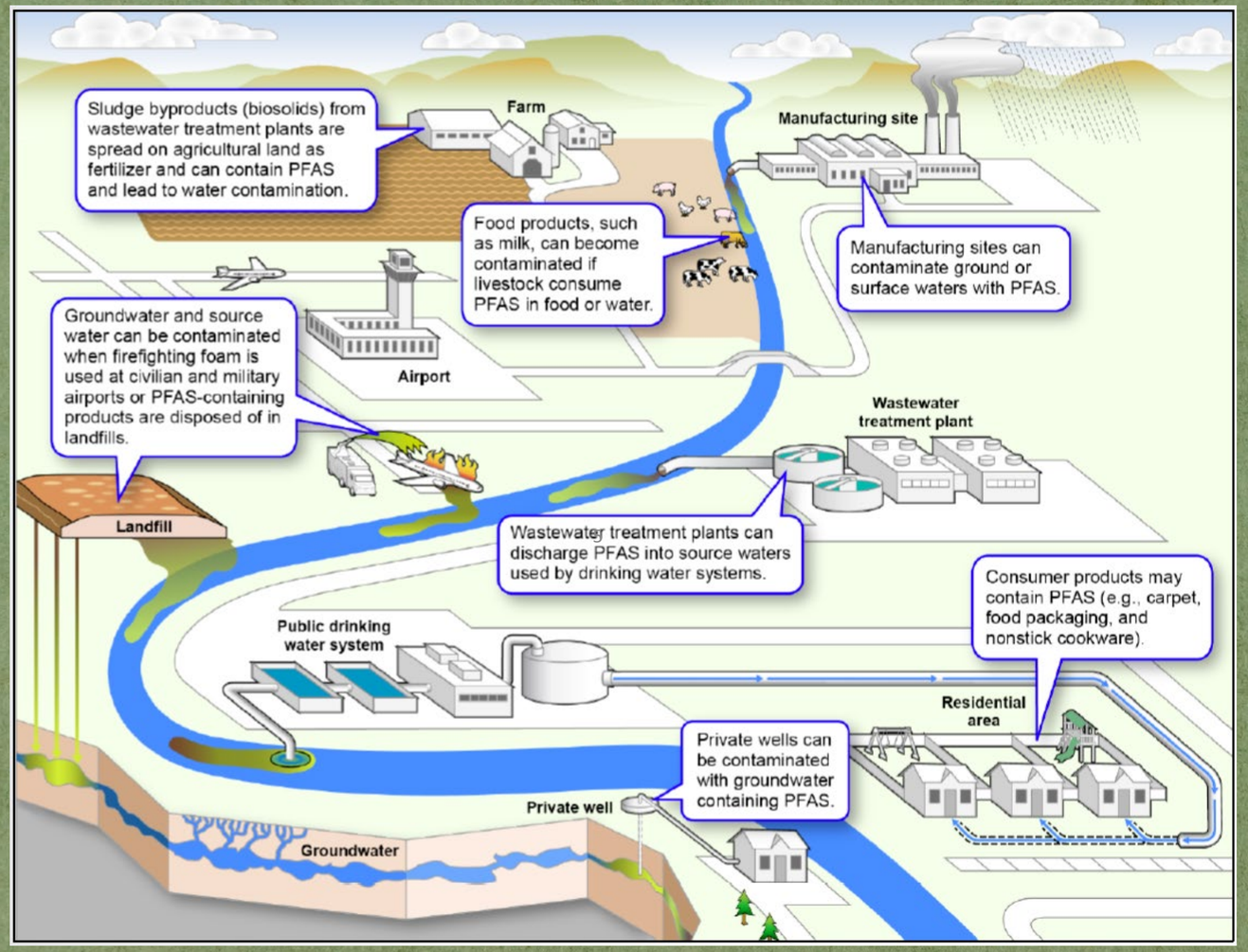
PFAS
Human Health Effects

- **Toxicology is evolving, but widespread issues are indicated.**
- **Half-life of PFOS in humans is over 5 years; PFOA half-life ~4 years.**
- **Some studies have shown up to 99.7% of Americans have measurable PFAS in their blood.**
- **Some estimates that 20% of the PFAS in blood is from drinking water (8% if not near a military installation); the predominant exposure pathway is assumed to be ingestion and dust.**
- **Atmospheric emission may also be a significant source.**
- **PFOA/PFOS in humans is decreasing since initial testing in late 1990's and early 2000's.**

	Endocrine	Immunotoxicity	Development	Reproductive	Neurotoxicity
Tested for specific effect?	Yes	Yes	Yes	Yes	Yes
Effects observed?	Yes[1]	Yes[2]	Yes[3]	Yes[4]	Yes[5]

OMW

Where is PFAS found?



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Regulatory Status
Toxic Substances Control Act (TSCA)

- **October 2023 – EPA released its final regulation requiring extensive one-time reporting by entitles that have manufactured or imported products containing PFAS.**
- **The final rule imposes reporting obligations on traditional manufacturers and importers of chemical substances and mixtures who are likely to be familiar with TSCA generally.**
- **Importantly, the obligations also apply to U.S. businesses not typically subject to TSCA reporting requirements.**
- **Very broad scope (no lower limit and unknown number of substances covered by the rule). The final rule excludes PFAS produced solely for use as a pesticide, or in food, food additive, drug, cosmetic, or medical device uses. 15 U.S.C. 2602(2).**

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Regulating PFAS
Federal Food, Drug and Cosmetic Act

- **FDA food packing regulations**
- **FDA cosmetic regulations**
- **There are also state laws on cosmetics and food packaging**

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Regulating PFAS
CERCLA

- **EPA issued a final rule on April 19, 2024, listing two ubiquitous PFAS chemicals - PFOA and PFOS- as hazardous substances under the Superfund law.**
- **The listing triggers cleanup liabilities and litigation risks for manufacturers and users of the two waterproofing compounds under CERCLA's joint, several, and retroactive liability standard.**
- **The CERCLA listing comes on the heels of another rule requiring that drinking water not contain PFOA, PFOS, or several other PFAS beyond almost imperceptible quantities.**
- **This also holds implications for past sites that are subject to "re-openers"**

Regulating PFAS
RCRA

- **EPA plans to issue a rulemaking for wastes that meet the statutory definition of “hazardous waste”.**

- **Constitutes the first steps in regulating PFAS under RCRA.**

Regulating PFAS
Safe Drinking Water Act

- **On April 10, 2024, EPA announced a rule setting enforceable maximum contaminant levels (MCLs) for six PFAS compounds in drinking water.**

- **EPA concluded that there is no level of exposure to PFOS or PFOA without risk of harm to human health, so EPA set MCLs for those compounds at the lowest levels current technology can detect (and on three other compounds at similarly low thresholds).**

- **Public Water Systems (“PWSs”) subject to the rule must complete initial monitoring by 2027 and comply with all MCLs by 2029.**

- **Ongoing compliance costs for PWSs will vary but could reach hundreds of millions for larger systems.**

Regulating PFAS
Safe Drinking Water Act (Cont'd.)

- **Final rule applies to:**
  - **every PWS that serves at least 15 service connections used by year-round residents;**
  - **that regularly serves at least 25 year-round residents; or**
  - **that regularly serves at least 25 of the same persons for more than six months per year. National Primary Drinking Water Regulations, 40 CFR § 141.2.**

- **If a PWS detects any of the six PFAS compounds at or above a trigger level—now set at half the MCLs—it must conduct quarterly monitoring for those PFAS until it can demonstrate compliance. PFAS MCL Rule at 611-12.**

- **PWSs have been granted a two-year capital improvement extension for MCL compliance, meaning they must comply with the MCLs two years after the 2027 deadline for initial monitoring. Any violations of the MCLs following that five years will require public notification. PFAS MCL Rule at 603-05.**

- **Additionally, states must adopt PFAS MCLs that are no less stringent than the federal PFAS MCLs to retain primary regulatory authority under the SDWA. 40 C.F.R. § 142.10**

Safe Drinking Water Act CERCLA Significance

- **SDWA MCLs are "applicable or relevant and appropriate requirements" or “ARARS” for purposes of Superfund remedy design. 42 U.S.C. § 9621(d)(2)(ii). Accordingly, these PFAS MCLs will influence the shape of Superfund remedial actions triggered by other contaminants.**

- **Because EPA has also finalized its rule listing certain PFAS chemicals as CERCLA hazardous substances, those listed PFAS compounds will themselves become triggering contaminants for purposes of Superfund response and liability.**

Regulating PFAS
Clean Water Act

- **NPDES Guidance to States**
  - **Influent, Effluent, Biosolids (BMPs and Effluent Limits); ongoing testing**

- **State NPDES PFAS Regulations (EPA has announced plans to issue guidance to states; some states have moved forward even without EPA guidance, instituting monitoring requirements for PFAS in state-issued)**

- **Effluent limits – EPA efforts to control PFAS in effluent is in early stages**

- **Water quality criteria – EPA is already developing ambient water quality criteria for PFOA and PFOS**
  - **Issued draft aquatic life criteria intended to protect aquatic life from "acute and chronic toxic effects of PFOA and PFOS (individually, not in combination)"**
  - **EPA plans to issue human health criteria by fall 2024**

**** Once EPA finalizes water quality criteria for PFOA and PFOS, EPA and authorized state and tribal governments may adopt those criteria to establish enforceable Water Quality Standards**

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Regulating PFAS
Clean Air Act

- **EPA is in the preliminary stages of its regulation of PFAS air emissions.**
- **EPA has not designated any PFAS as air pollutants regulated under the CAA.**
- **But, it has spelled out plans to eventually regulate PFAS air emissions in the PFAS Strategic Roadmap.**
- **Those plans center on the Agency's Hazardous Air Pollutant program.**

PFAS in the Courts

- **Since 1998, thousands of lawsuits have been filed.**
- **Among others, *3M*, *Dupont*, Tyco Fire Products, Chemguard, Wolverine, states, municipalities, public utilities and the DoD have been sued.**
- **Recent shift to manufacturers/sellers of consumer goods.**
- **Upcoming deadlines for water provider lawsuit (~$12-14B).**
- **Current regulations themselves subject to lawsuits.**

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Thank you very much!

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HGL

What to do About PFAS

ANALYSIS, CHARACTERIZATION, AND REMEDIATION

HGL CONTRIBUTORS

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Dr. Cindy Crane, PE

Chief Engineer

AGENDA

1. **What are PFAS?**

   Overview of PFAS, historical production/usage, and health effects

2. **Analysis**

   Available sampling methods

3. **Characterization**

   Tracking PFAS in various media (e.g., soil, groundwater) and signatures of PFAS sources

4. **Remediation**

   Applicable treatment technologies for soil and groundwater

1

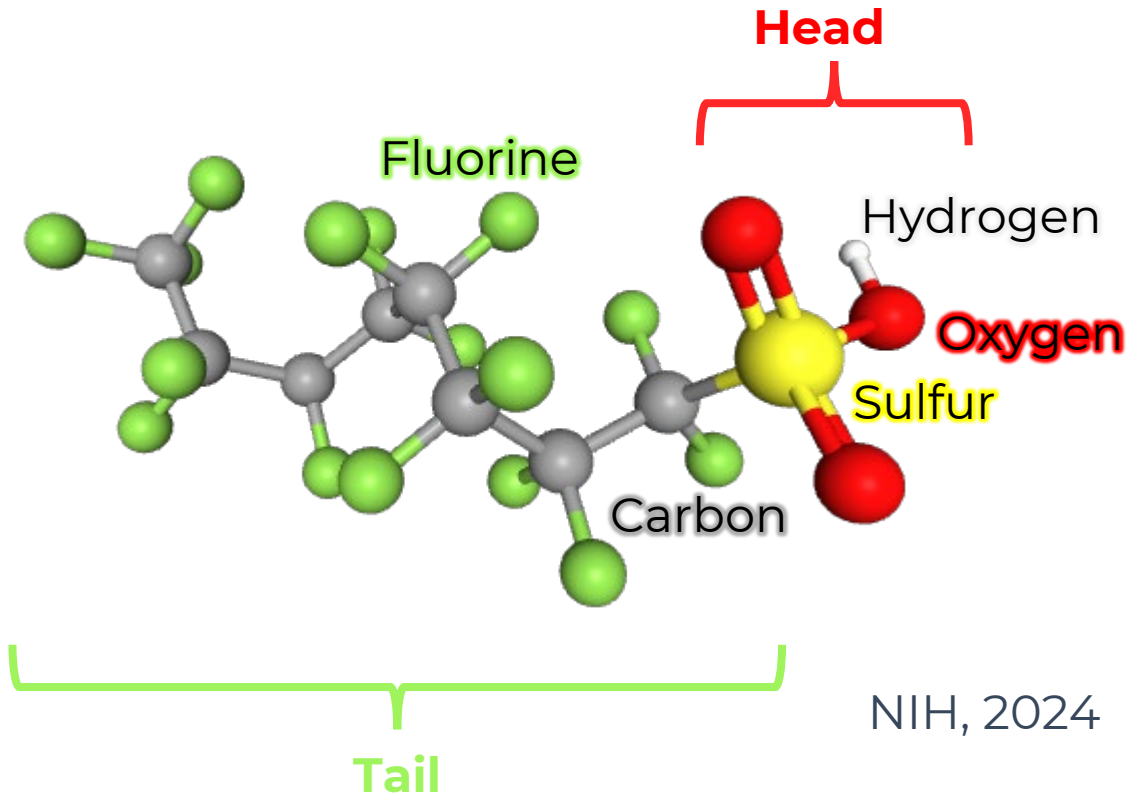
WHAT ARE PFAS?

PFAS
Per- and Polyfluoroalkyl Substances

- Family of >14,000 chemicals (EPA, 2022)
- Composed of carbon atoms linked to fluorine atoms

  Hydrophobic tail: repels water

  Hydrophilic head: attracts water
- Primary PFAS in the news are perfluoroalkyl acids (PFOS/PFOA)



NIH, 2024

EPA, 2022. PFAS structures in DSSTox (updated August 2022). https://comptox.epa.gov/dashboard/chemical-lists/PFASSTRUCTV5
NIH, 2024. Perfluorooctanesulfonic acid (compound) https://pubchem.ncbi.nlm.nih.gov/compound/Perfluorooctanesulfonic-acid#section=2D-Structure

PFAS Properties

Foam photo – CH2MHill

- Waterproof, greaseproof, stainproof
- Persistent & Stable
- Resistant to heat
- Resistant to chemical reactions and biological degradation
- Accumulate/concentrate in environment
- Mobile in the environment

PFAS Production History

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Initial Production

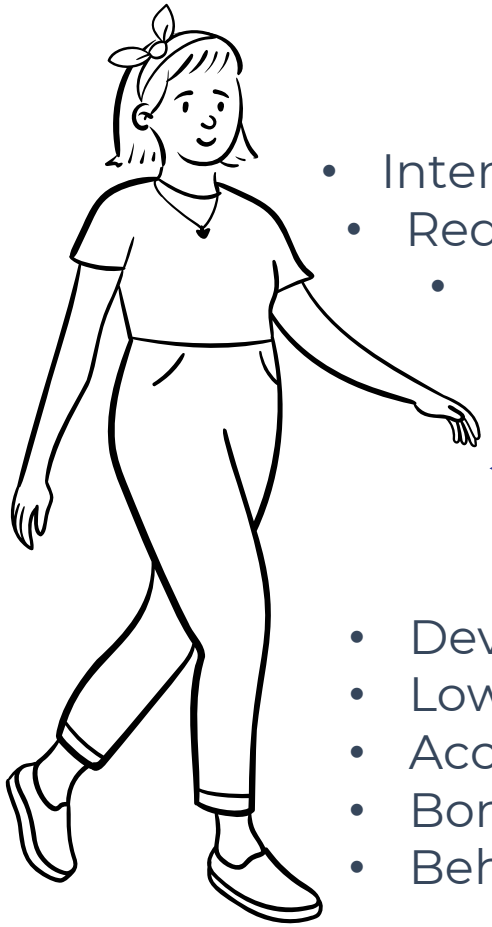
Commercial Production

PFAS[1]	Development Time Period							
	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
PTFE	Invented	Non-Stick Coatings			Waterproof Fabrics			
PFOS		Initial Production	Stain & Water Resistant Products	Firefighting foam				U.S. Reduction of PFOS, PFOA, PFNA (and other select PFAS[2])
PFOA		Initial Production		Protective Coatings				
PFNA					Initial Production	Architectural Resins		
Fluoro-telomers					Initial Production	Firefighting Foams		Predominant form of firefighting foam
Dominant Process[3]		Electrochemical Fluorination (ECF)						Fluoro-telomerization (shorter chain ECF)

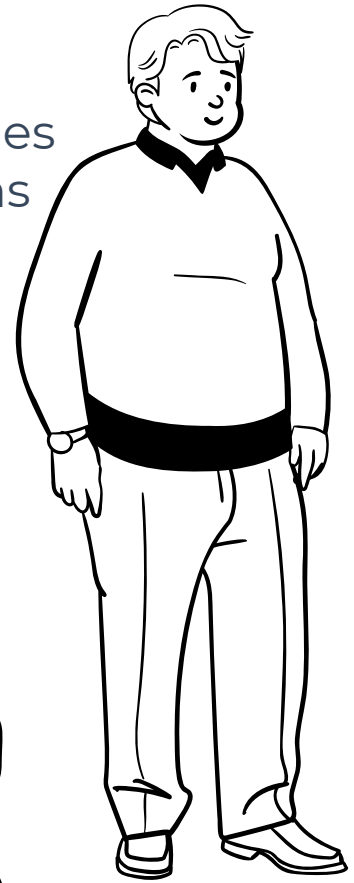
https://slimemoldtimemold.com/2021/07/26/a-chemical-hunger-part-vi-pfas/

Known PFAS Health Effects

- Increased blood pressure during pregnancy

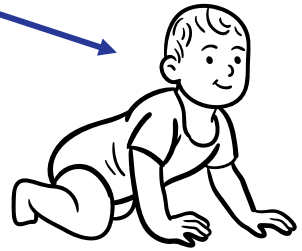


- Increased cholesterol
- Interference with natural hormones
- Reduced ability to fight infections
- Reduced vaccine response
- Kidney Cancer
- Decreased Fertility



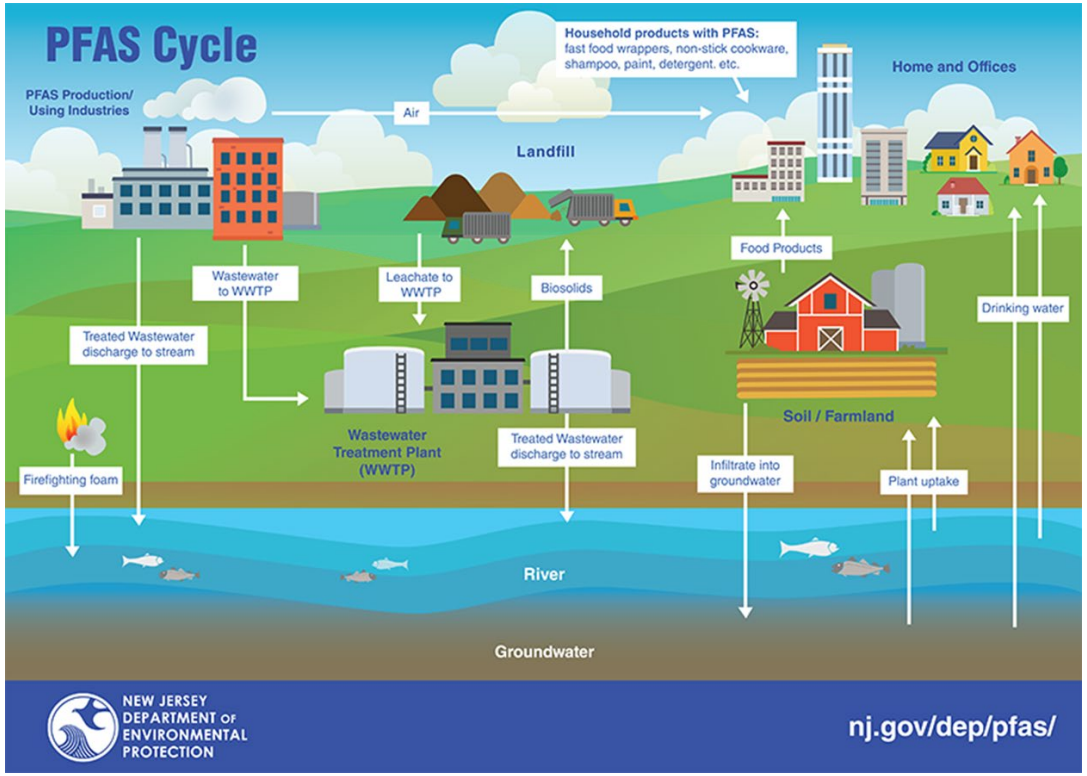
- Prostate Cancer
- Testicular Cancer

- Developmental Delays
- Low Birth Weight
- Accelerated Puberty
- Bone Variations
- Behavioral Changes



https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas

PFAS Exposure



- PFAS found in the blood serum of most U.S. residents
- PFAS can stay in tissue for years to decades
- Direct (firefighting foam) & indirect (landfill) sources

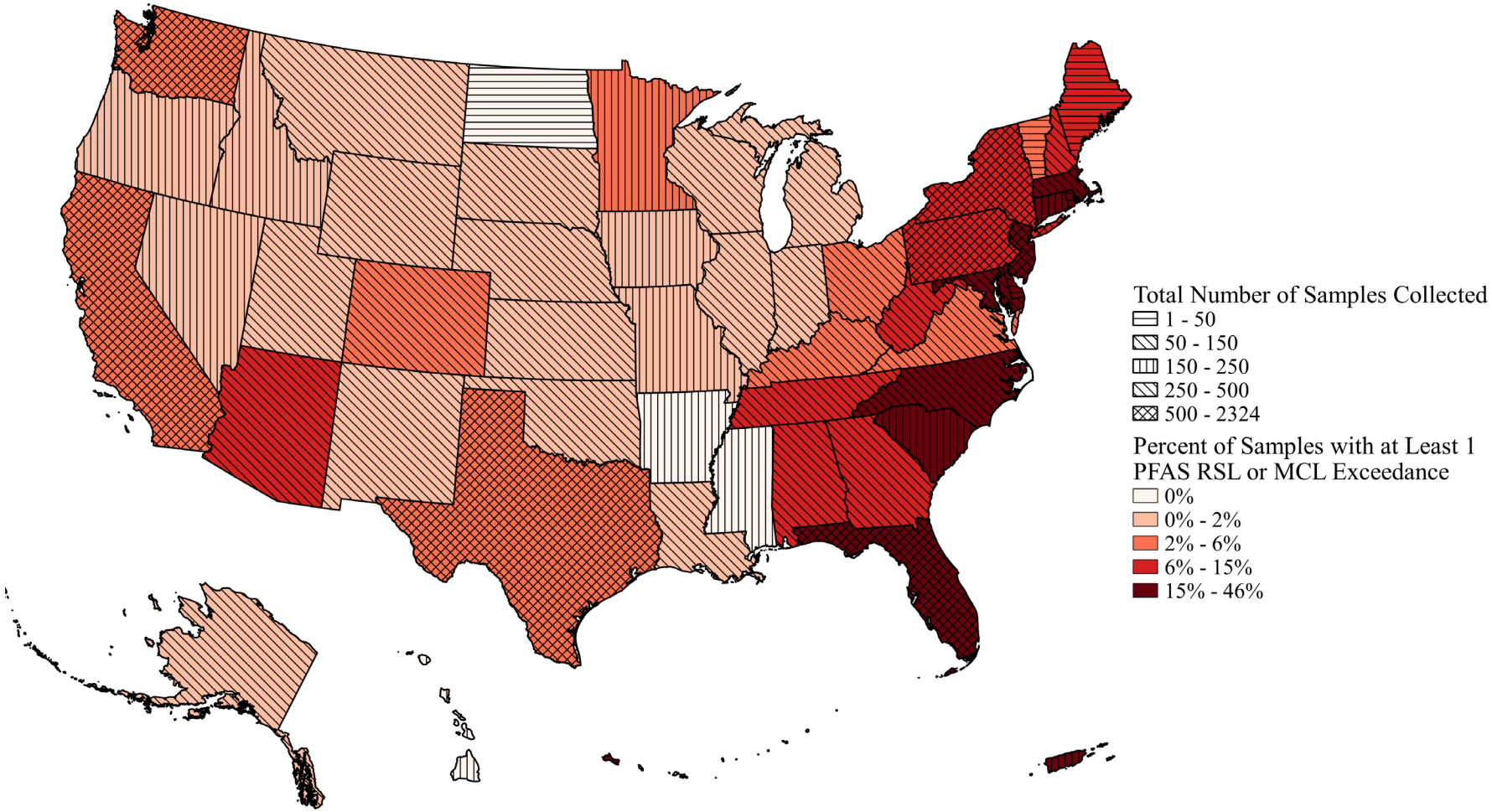
https://dep.nj.gov/pfas/about/; https://pfas-1.itrcweb.org/7-human-and-ecological-health-effects-of-select-pfas/

PFAS Maximum Contaminant Levels (MCLs)

Compound	Final MCL (enforceable levels)
PFOA	4.0 parts per trillion (ppt) or ng/L
PFOS	4.0 ppt
PFHxS	10 ppt
PFNA	10 ppt
HFPO-DA (GenX)	10 ppt
Mixtures containing two or more PFHxS, PFNA, HFPO-DA, and PFBS	1 (unitless) Hazard Index *(see below)*

$$HI\ MCL = \left(\frac{[HFPO{-}DA_{water}]}{[10\ ppt]}\right) + \left(\frac{[PFBS_{water}]}{[2000\ ppt]}\right) + \left(\frac{[PFNA_{water}]}{[10\ ppt]}\right) + \left(\frac{[PFHxS_{water}]}{[10\ ppt]}\right) = 1$$

PFAS Prevalence – UCMR5 January 2024 Update



16,768 Samples Collected

Exceedances of MCLs or RSLs

1. PFOS: 1106 (MCL)
2. PFOA: 1028 (MCL)
3. PFHxS: 129 (MCL)
4. PFNA: 7 (MCL)
5. HFPO-DA: 4 (MCL)
6. PFBA, PFBS, PFHxA, PFUnA, PFDoA , PFTeA: 0 (RSLs)

- States may have their own, separate database

2

ANALYSIS

The Culprits:
40 Analytes with Method 1633

Perfluoroalkyl carboxylic acids	
Perfluorobutanoic acid	PFBA
Perfluoropentanoic acid	PFPeA
Perfluorohexanoic acid	PFHxA
Perfluoroheptanoic acid	PFHpA
Perfluorooctanoic acid	PFOA
Perfluorononanoic acid	PFNA
Perfluorodecanoic acid	PFDA
Perfluoroundecanoic acid	PFUnA
Perfluorododecanoic acid	PFDoA
Perfluorotridecanoic acid	PFTrDA
Perfluorotetradecanoic acid	PFTeDA
Perfluoroalkyl sulfonic acids	
Acid Form	
Perfluorobutanesulfonic acid	PFBS
Perfluoropentanesulfonic acid	PFPeS
Perfluorohexanesulfonic acid	PFHxS
Perfluoroheptanesulfonic acid	PFHpS
Perfluorooctanesulfonic acid	PFOS
Perfluorononanesulfonic acid	PFNS
Perfluorodecanesulfonic acid	PFDS
Perfluorododecanesulfonic acid	PFDoS

Fluorotelomer sulfonic acids	
1*H*,1*H*, 2*H*, 2*H*-Perfluorohexane sulfonic acid	4:2FTS
1*H*,1*H*, 2*H*, 2*H*-Perfluorooctane sulfonic acid	6:2FTS
1*H*,1*H*, 2*H*, 2*H*-Perfluorodecane sulfonic acid	8:2FTS
Perfluorooctane sulfonamides *	
Perfluorooctanesulfonamide	PFOSA
N-methyl perfluorooctanesulfonamide	NMeFOSA
N-ethyl perfluorooctanesulfonamide	NEtFOSA
Perfluorooctane sulfonamidoacetic acids *	
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA
Perfluorooctane sulfonamide ethanols *	
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE
Per- and Polyfluoroether carboxylic acids	
Hexafluoropropylene oxide dimer acid	HFPO-DA
4,8-Dioxa-3*H*-perfluorononanoic acid	ADONA
Perfluoro-3-methoxypropanoic acid	PFMPA
Perfluoro-4-methoxybutanoic acid	PFMBA
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA

Analytical Methods

	Media												Number of Analytes	
Method	Air	Drinking Water	Wastewater	Groundwater	Surface Water	Landfill Leachtate	Soil	Sediment	Biosolids	Food	Blood Serum	AFFF Concentrates	Terminal PFAS	Precursor PFAS
USEPA 533 (2019)		X											14	11
USEPA 537.1 (2009, 2018, 2020)		X											12	6
USEPA 1633 (2024)			X	X	X	X	X	X	X	X			19	21
USEPA SW-846 Methods 3512 and 8327 (2021)			X	X	X								18	6
DOD AFFF01												X		
USEPA Other Test Method (OTM) 45	X													
ASTM D8421-22														
ISO 25101:2009		X		X	X								2	0
ISO 21675:2019		X	X	X	X									
ASTM D7979-20			X						X					
ASTM D7968-17a							X							
ASTM D8421-22		X		X	X									
FDA CAM Method: C-010.02, Version 2021										X			12	4
CDC: 6304.09											X		6	5

https://pfas-1.itrcweb.org/11-sampling-and-analytical-methods/#11_2

Method 1633 (Jan 2024)
Method Development and Final Method

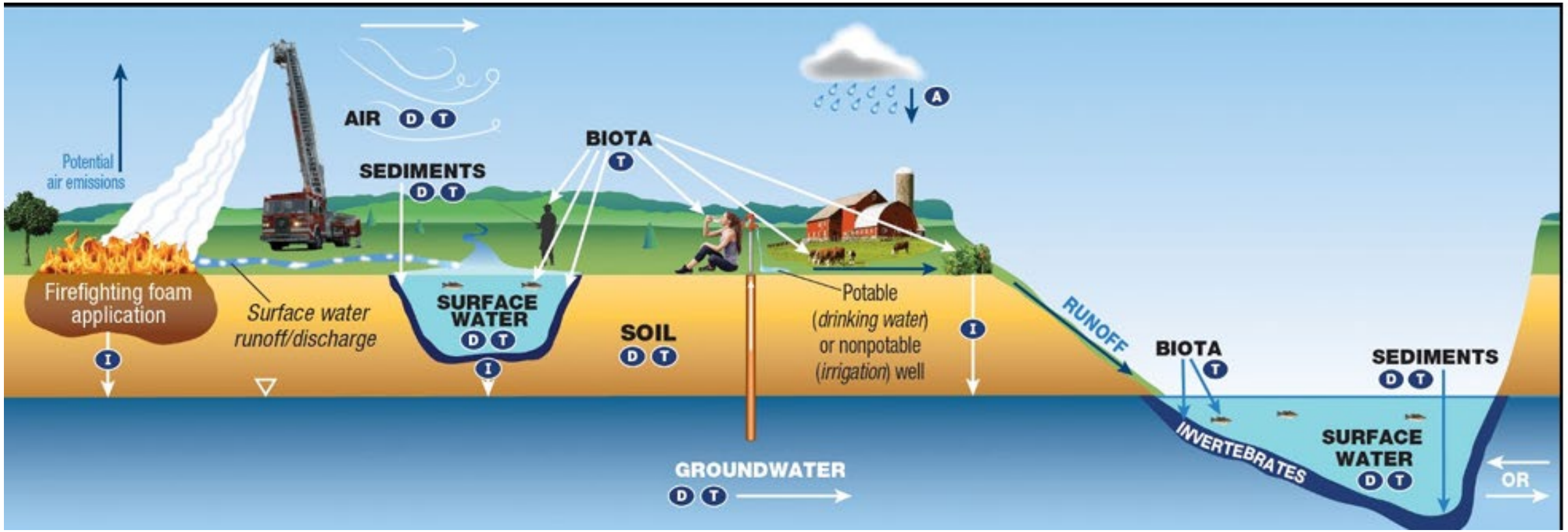
- Based on existing methods for extraction and analysis suitable to the chemical and physical properties of PFAS.
- HGL coordinated between EPA, DOD, and laboratories; reviewed draft methods; and checked completeness of lab reports and electronic data.

EPA has posted errata and clarifications at: https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas

3

CHARACTERIZATION

Release – Conceptual Site Model



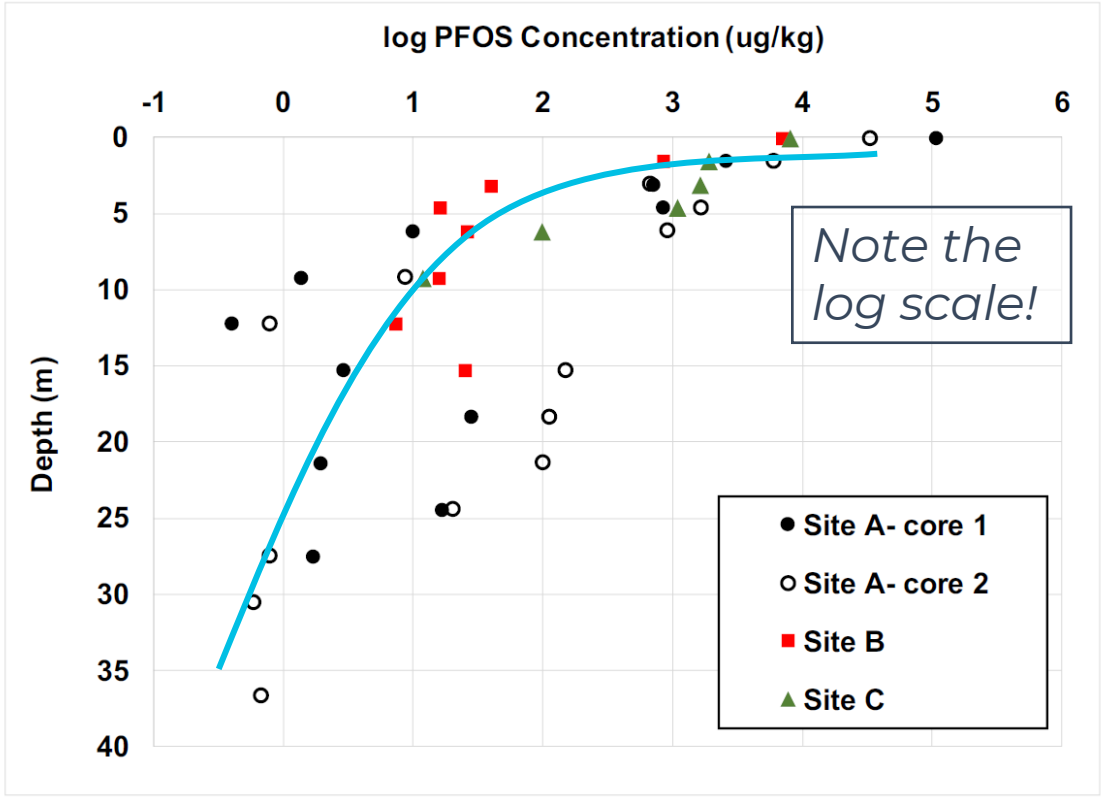
L. Trozzolo, TRC and ITRC https://pfas-1.itrcweb.org/2-6-pfas-releases-to-the-environment/

Initial Characterization

- Two key areas to characterize:
  1. initial source area where PFAS was released (primarily in soil)
  2. far from the source in groundwater (and/or surface water)
- Depth to water measurements provide valuable insight into where the water is going

Soil

- PFAS loves staying near surface
- Longer-chains (e.g., PFOS/PFOA) tend to stick to the surface more compared to shorter chains (e.g., PFBA/PFBS)
- Target surficial samples to identify potential hot spots first (with hand samples); results guide subsurface characterization, which may require drill rig



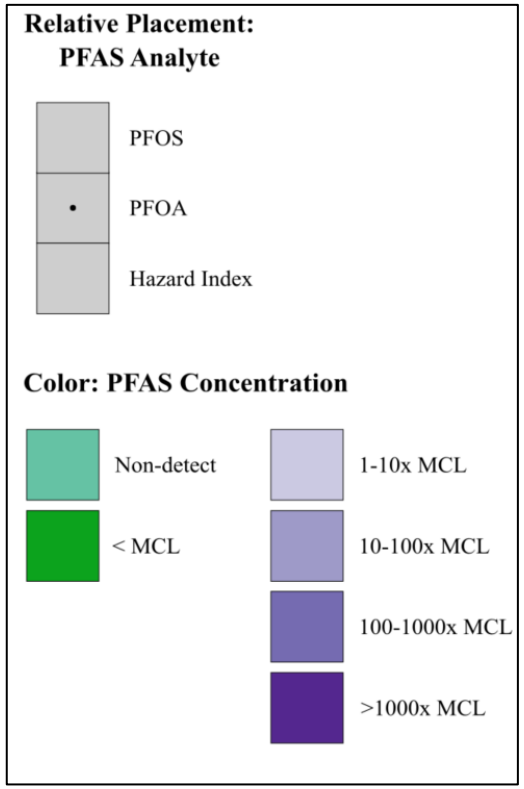
Brusseau et al., 2020

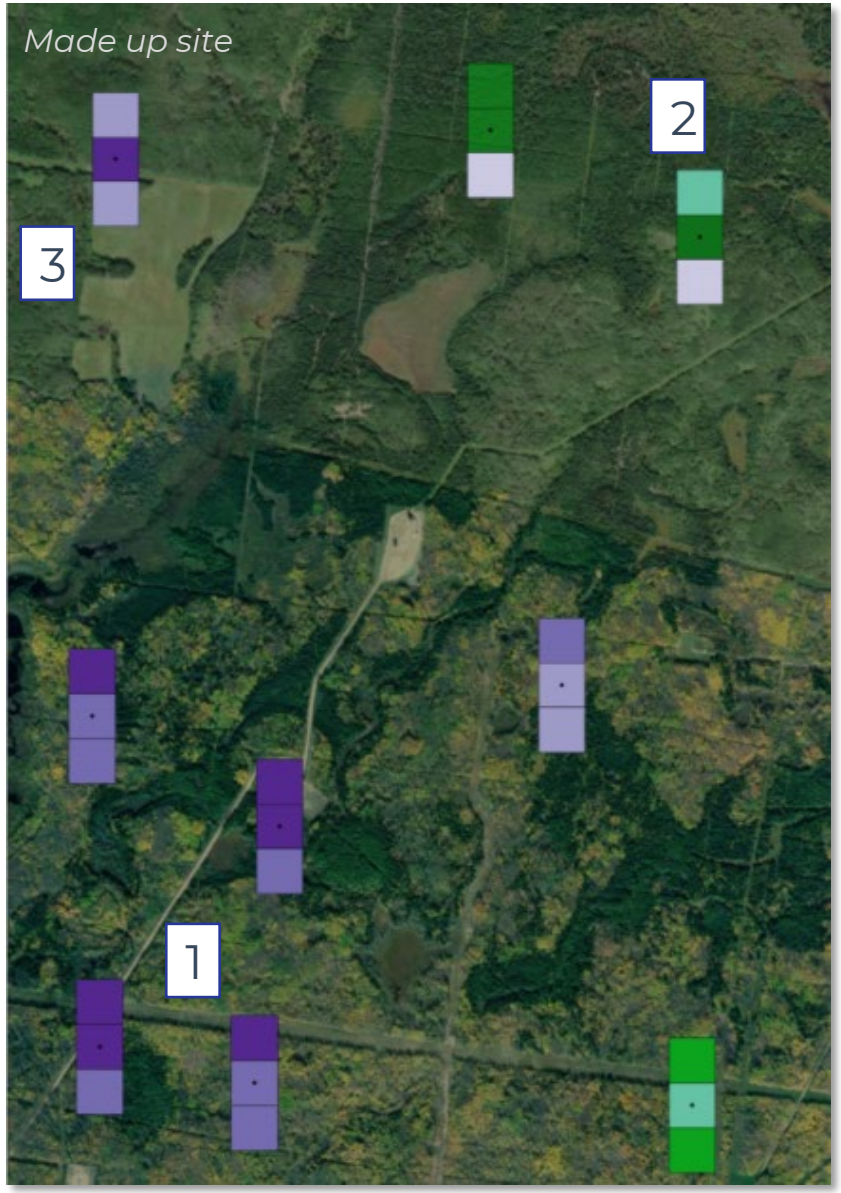
PFAS in the Environment: Visualization Approaches

1. **Source Area** – High concentrations >1000x the MCLs for PFOS and PFOA

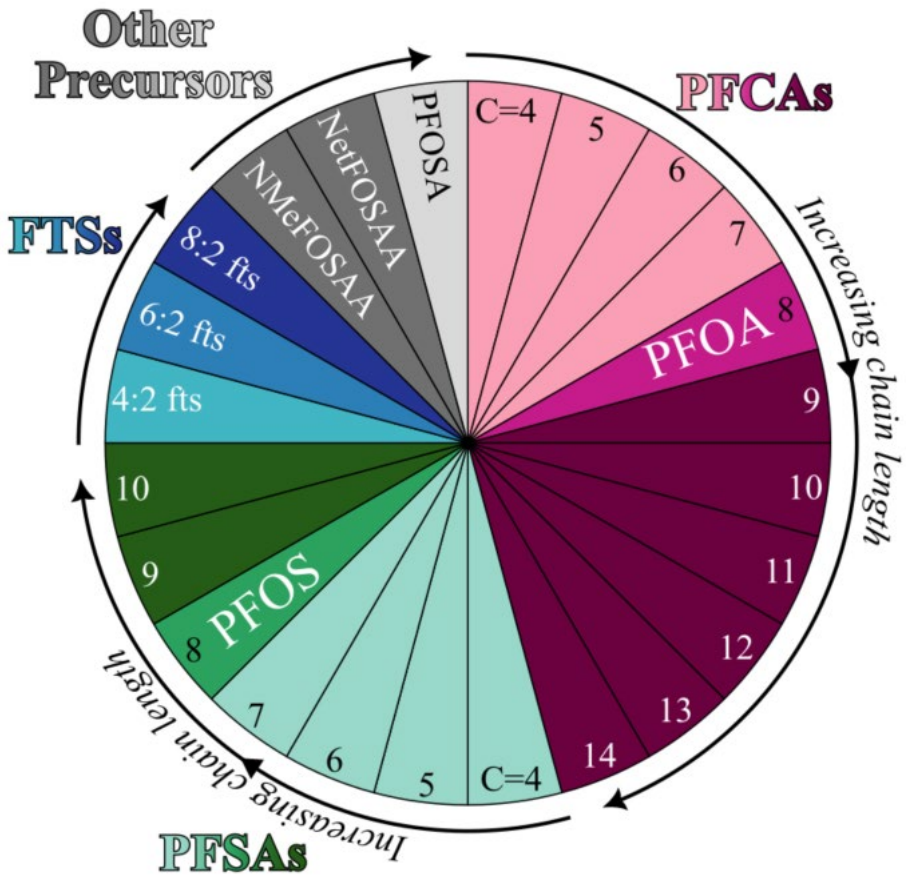
2. **Downgradient** – shorter chain PFAS that comprise the Hazard Index (e.g., PFHxA) drive impacts

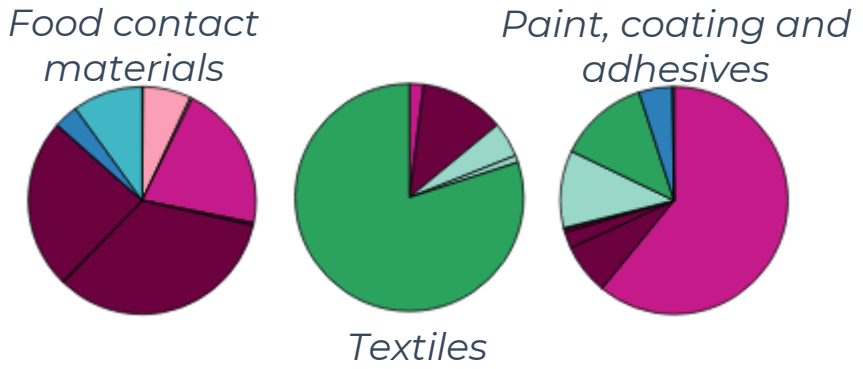
3. **Side gradient** – PFOA >1000x the MCLs with PFOS between 10-100x MCL is different than the source area and indicates we may want to look into this sample more

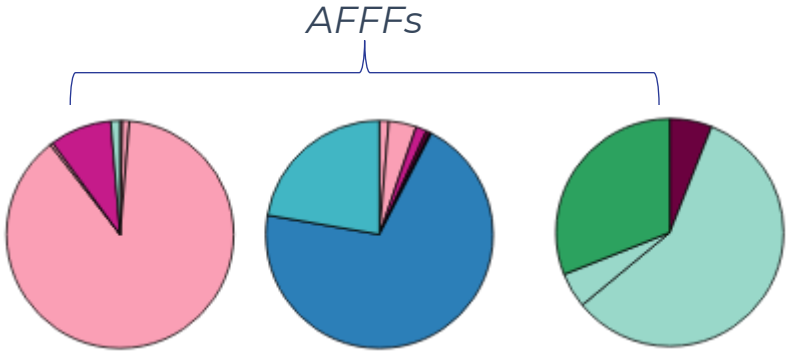




Source signatures



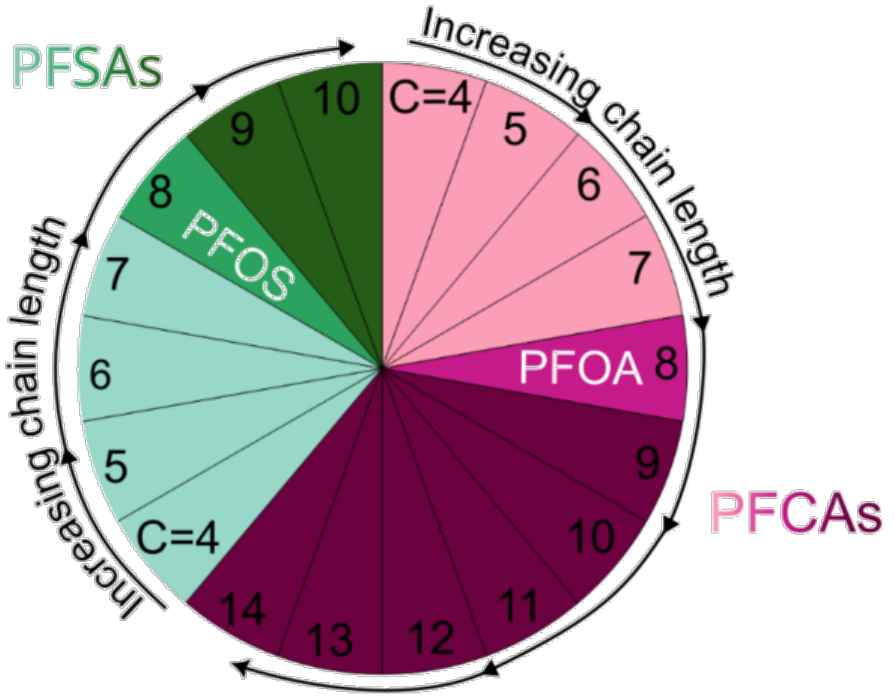


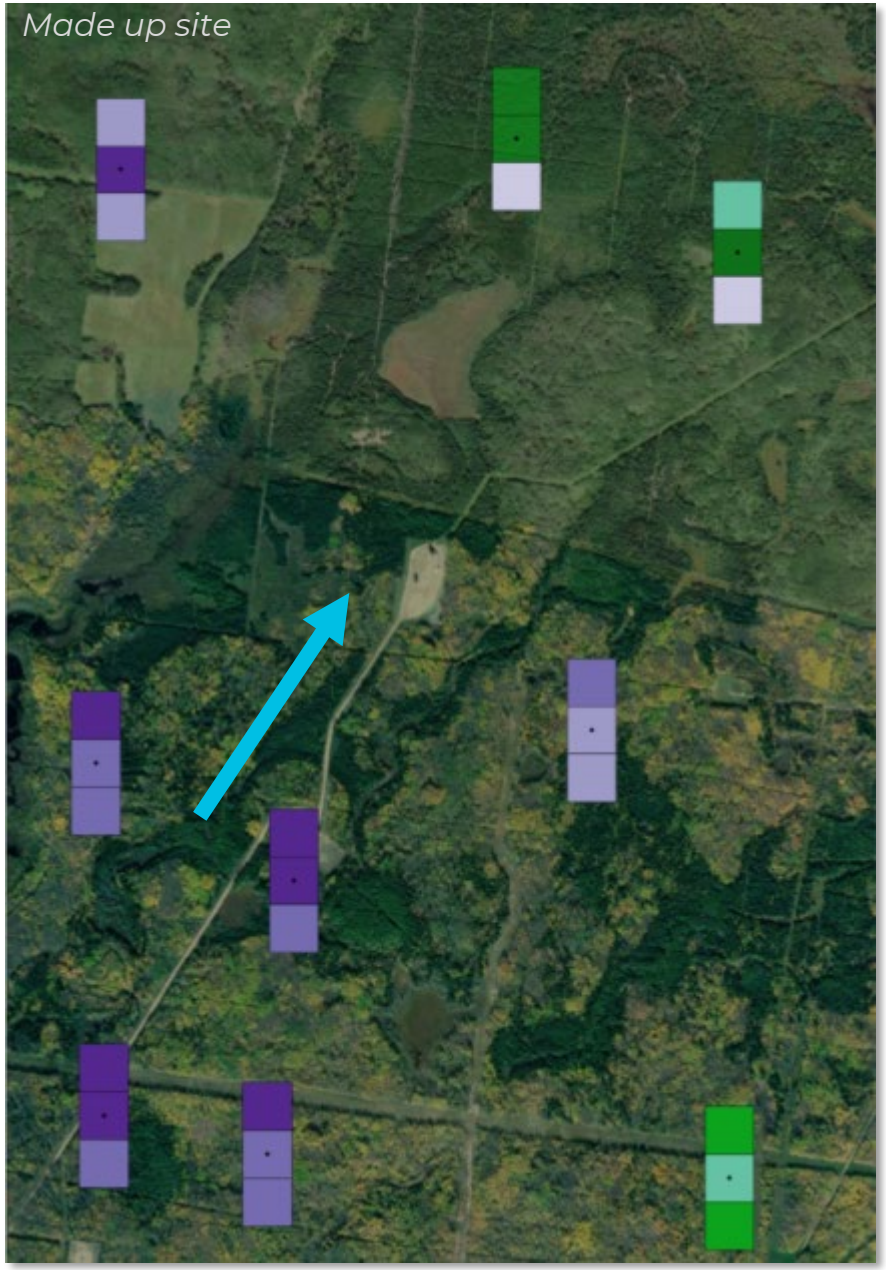


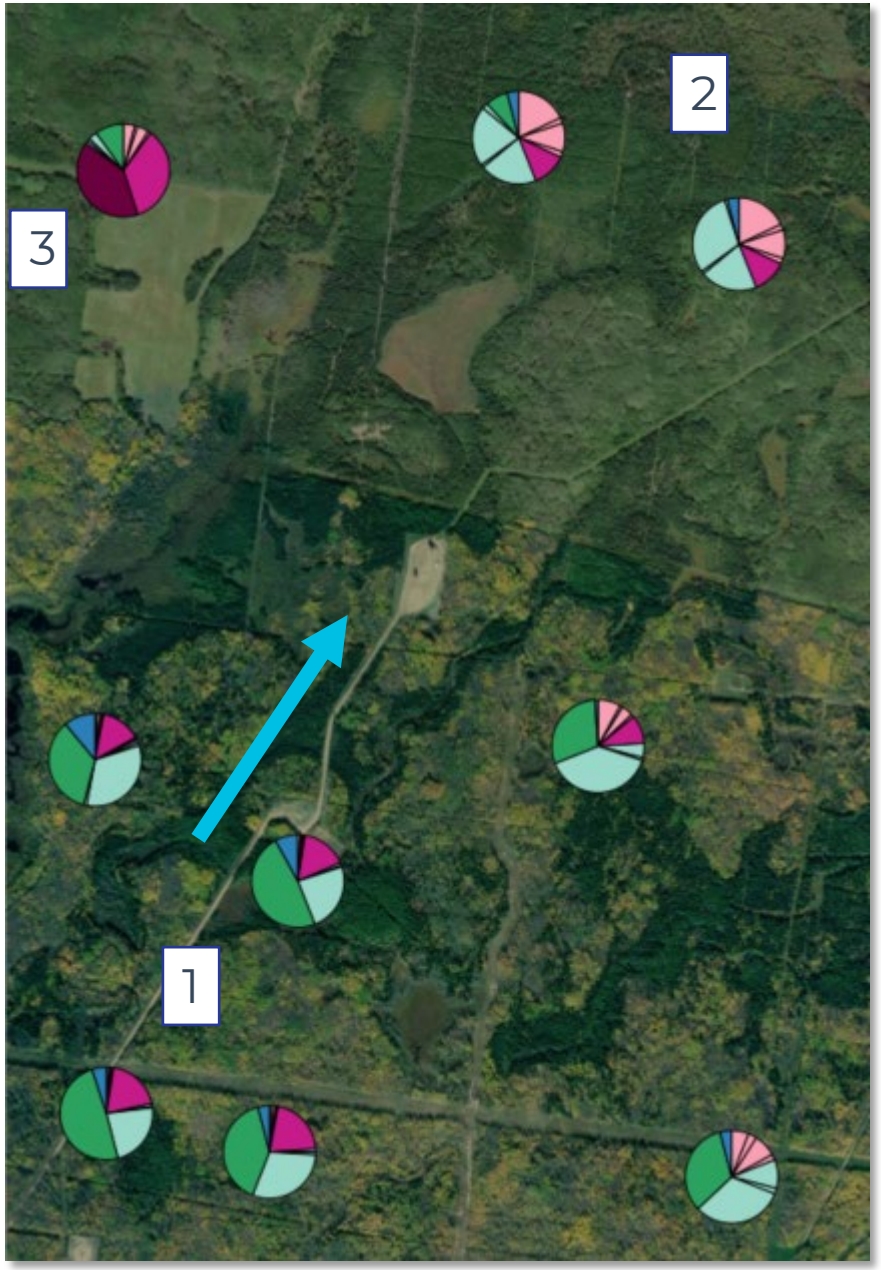
- PFAS travel at different rates, so the apparent source signature changes along a pathway

PFAS Forensics
Whose PFAS is it?

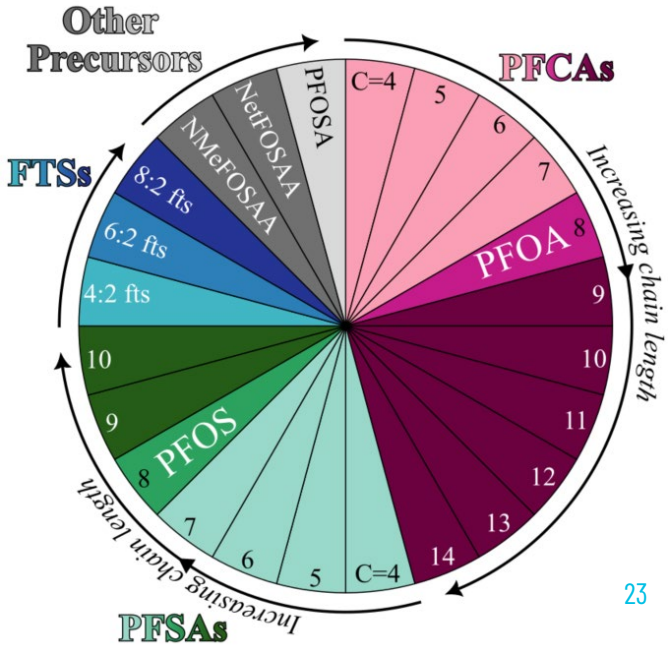
- The PFAS “soup” for firefighting foam is different from PFAS for textiles – different applications have their unique “fingerprint”
- The whole suite of analytical data is critical for source identification







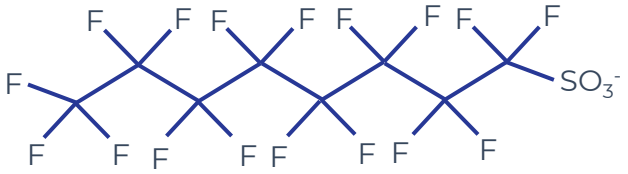
1. Source is dominated by PFOS
2. Far from the source, more shorter chains due to differential transport speed
3. Odd signature – different source?



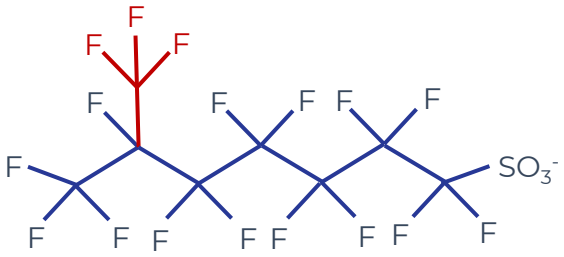
PFAS Manufacturing
Linear vs Branched PFAS

- The ratio of branched to linear PFAS is useful in identifying the manufacturing process
- Fluorotelomerization produces primarily linear PFAS
- Electrical chemical fluorination (ECF) produces a mixture of linear to branched PFAS (~70% linear PFOS and 30% branched PFOS)
- Linear and branched PFAS move differently in the environment and tend to accumulate in different media

Linear PFOS



Branched PFOS

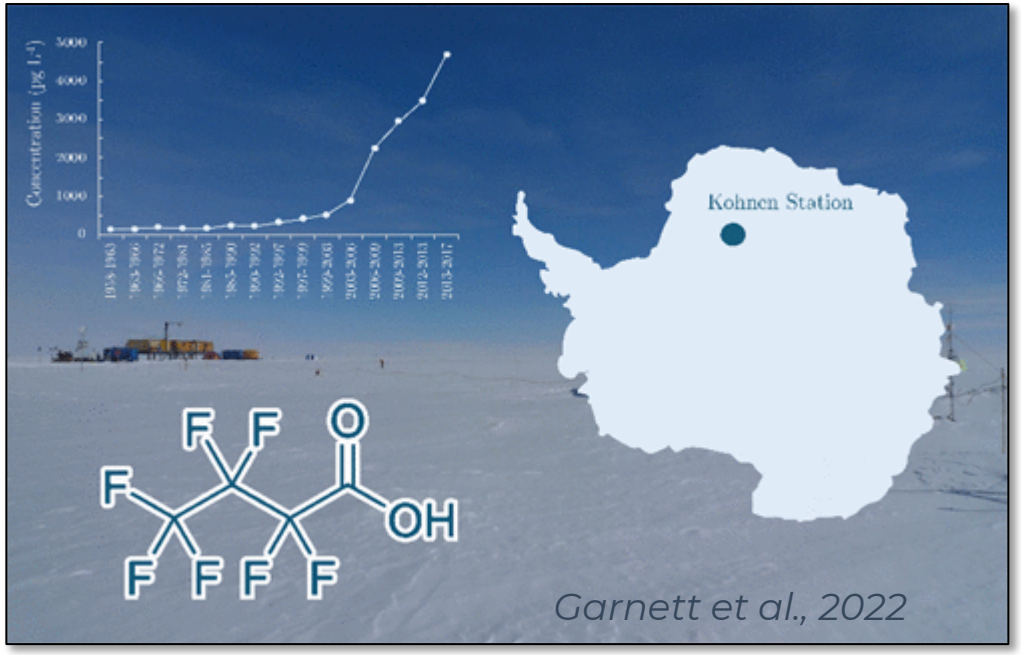


(occurs in many different configurations)

https://pfas-1.itrcweb.org/2-2-chemistry-terminology-and-acronyms/
https://cdnmedia.eurofins.com/european-east/media/2184182/branched_pfas_short_facts_1804.pdf
Benskin, DeSilva, and Martin, 2010. Isomer Profiling of Perfluorinated Substances as a Tool for Source Tracking: A Review of Early Findings and Future Applications. *Reviews of Environmental Contamination and Toxicology*, 208:111.

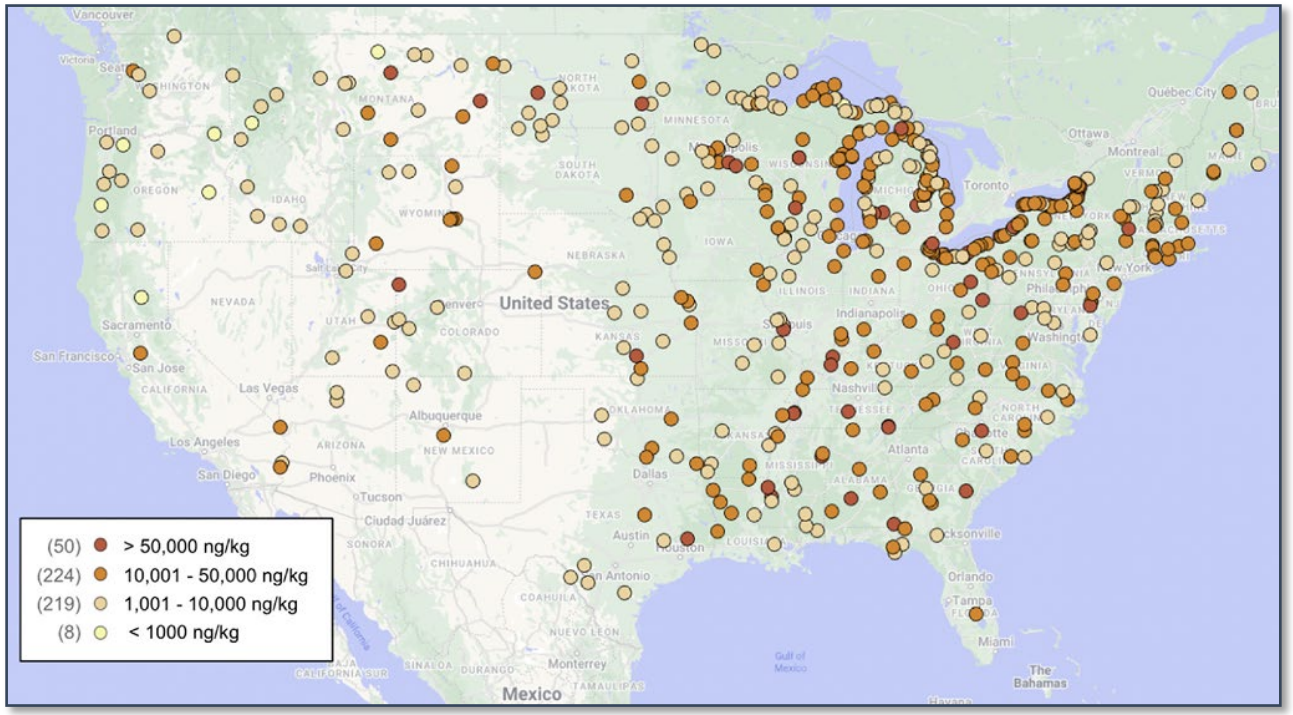
Delineation Challenges:
Background Concentrations

- PFAS observed across the world, even in Antarctica
- PFAS used in numerous applications
- MCLs are critically low
- Detections of PFAS—even above the MCL—may not clearly indicate a responsible party



Fish Tissue

- PFAS is bioaccumulative, particularly in protein-rich tissues of fish
- Freshwater fish consumption may be a significant source of PFOS exposure
- National testing (U.S. EPA): Nearly all fish in U.S. rivers and the Great Lakes have detectable PFAS
- U.S. FDA: Seafood purchased at grocery stores have significantly lower levels of PFAS



Total quantifiable PFAS in freshwater fish in the continental United States (2013–2015)
Barbo et al., 2023

4

REMEDIATION

Soil Remediation

https://catalog.archives.gov/id/5891584

- **Excavation with off-site disposal**
  - Well-established approach
  - May be difficult to find nearby disposal facility
- **In situ stabilization**
  - Use of adsorbent, such as activated carbon, to prevent leaching
  - Not applicable for addressing direct contact or ecological risks
- **Soil washing**
  - Transfers PFAS from soil to wash solution, which is then treated
  - Reduces volume of PFAS-contaminated soil requiring offsite disposal

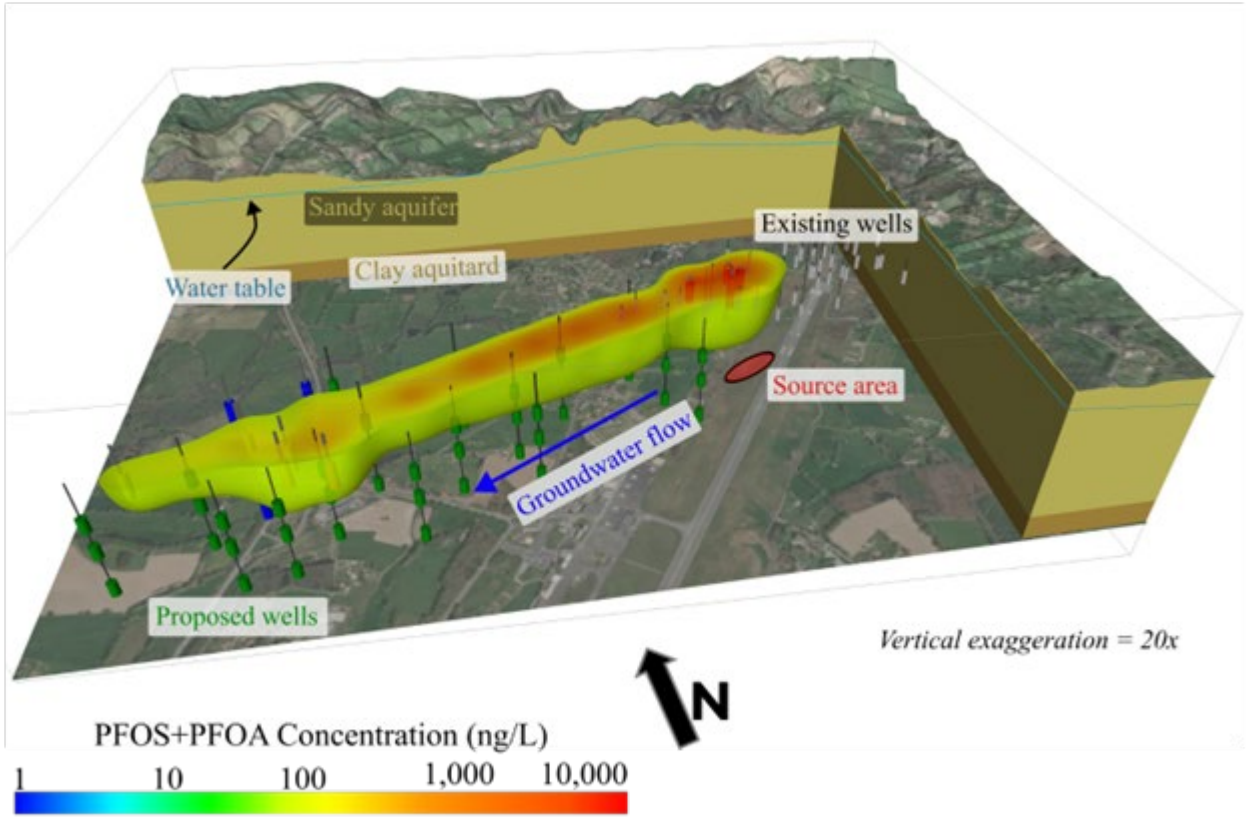
Groundwater Remediation

- Ex situ – established technologies
  - Granular activated carbon
  - Ion exchange
  - Reverse osmosis or nanofiltration – often not selected due to generation of PFAS-contaminated reject water requiring disposal
- In situ stabilization with activated carbon or other adsorbent
  - Requires replenishment once adsorption sites are filled

SUMMARY

Key Take Home Messages

- PFAS are ubiquitous in the environment and persistent – they will not disappear on their own
- There are methods to characterize PFAS impacts and to identify potential sources
- Different PFAS sources have unique signatures that may be critical in identifying sources and responsible parties
- Effective remediation and treatment technologies are available, but they are costly to treat to the ultra-low concentration standards
- PFAS have been called "*forever chemicals*" but research is on-going; treatment options are available



Recommended Actions

- Test drinking water sources and food sources to determine if actions need to be taken to protect against human health impacts
- Monitor ongoing developments in PFAS regulations and policies – these are very much in flux and more new regulations are expected
- Develop PFAS knowledge and expertise among your technical staff and foster relationships with consulting experts
- If you are involved in an active Superfund site, evaluate whether and how the remedy characterizes and addresses PFAS contamination

Thank You

Restoring the Environment.
Protecting Our Future.

Exercising Sovereignty Through Tribal Administrative Law

11:45 a.m. PT / 1:45 p.m. CT

June 12, 2024

OGDEN MURPHY WALLACE
ATTORNEYS

Andrew S. Fuller
Tribal Government and
Environmental Practice Groups
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Exercising Sovereignty Through Tribal Administrative Law

- Overview: Administrative Law, the "4th Branch" of Government
- The Role of Administrative Law in Protecting the Environment
- The Intersection of Federal Administrative Law and Tribal Environmental Law
- Utilizing Tribal Administrative Law to Enhance Tribal Sovereignty

Functions of Administrative Law

- Agency Creation
- Rulemaking
- Public Participation
- Enforcement
- Adjudication
- Judicial Review

The Role of Administrative Law in Environmental Protection

- Authorizes Administrative Agencies
- Creation of Rules
- Public Input
- Monitoring for Environmental Compliance
- Framework for Legal Challenges

The Intersection of Federal Administrative Law and Tribal Environmental Law

- Recognition of Tribal Sovereignty Over Lands and Resources
- Cooperative Federalism
- Gap Filling

Utilizing Administrative Law to Enhance Tribal Sovereignty

What benefits do the application of tribal administrative law provide in the context of environmental protections?

Utilizing Administrative Law to Enhance Tribal Sovereignty

What does the application of tribal administrative law look like in practice?

Questions?

OMW

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Contracting With Consultants

Tribal Environmental Seminar 2024

OGDEN MURPHY WALLACE
ATTORNEYS

Drew Pollom
Associate
Ogden Murphy Wallace, PLLC

Agenda

- Pre-Contract Process: Interview Process and Due Diligence
- Consultant Arrangements
- Scope of Work
- Contract Language
- Dispute Resolution

Doing Due Diligence prior to the engagement

- Initial Interview
  - Send a Confidentiality Agreement to allow for dialogue during the interview process.
  - Discuss Skill Sets.
  - Familiarity with the Subject Matter.
  - Request One or two references of past clients.

- Red Flags to Consider:
  - Over-promising and under-delivering.
  - The Bait and Switch: The consultant sets the expectations that the “top guy” will do the work and then delegates work to the junior associate.

Consultant Arrangements: Who Is The Client?

- Consultant directly engages a tribe or tribal entity, signing the engagement letter with the tribe. Who is the Consultant's client?
  - The tribe or the tribal entity is the Consultant's client and interacts directly with the Consultant.

- The consultant engages with an outside law firm that represents the tribe or tribal entity. The Consultant's work directly benefits the tribe or tribal entity. Who is The Consultant's Client?
    - The tribe or tribal entity?
    - The law firm?

Consultant Arrangements: Contracting Through the Attorney

- Arrangements can extend both Attorney-Client Privilege and Attorney Work Product Privilege to the Consultant's work (with some limitations)
    - Attorney-Client: Attorney-client privilege protects confidential communications between a lawyer and their client relating to the client's seeking legal advice or services. This protection extends to any information exchanged during these privileged communications, encompassing not only verbal discussions but also written correspondence, emails, text messages, and other forms of communication.
    - Attorney Work Product: The work-product privilege (or "work-product doctrine") protects from discovery by the opposing party "documents and tangible things that are prepared *in anticipation of litigation* or for trial.
- Difference between Consulting expert versus expert retained to testify at trial: everything you tell them is *discoverable.*

How do you define the Scope of Work?

- Scope of work helps both parties understand the nature of the engagement as well as set the expectations for work under the engagement.

- Elements of a Scope of Work:
  - Clearly identifies the work to be performed and for what purpose
  - May be directly tied to work being done under an EPA or DOI Grant, or a tribal agreed, administrative, consent decree, or a unilateral order
    - What are the Pros and Cons of this?

- A Scope of work tied to a grant or Order will need to be amended or have some other provision when work is to be performed outside of the Order.

How should Fees and Payments be arranged?

- Fees based on times and materials.
- Fixed price fees.
- Fees based on an annual budget/ budgets per tasks.
- Rate increases must be approved by client. Could provide that rates will not increase for a period of time, like every two years.
- Payment: How and When payment will be remitted.

Contract: Insurance/Indemnities/ Limitation of Liabilities

- The contract has to include insurance provisions to ensure the consultant has the correct insurance.
  - Includes commercial liability, workers' compensation, professional liability, and automotive liability.
  - Doing desktop work vs field work.
  - Tribe/Tribal Entity listed as additional insureds

- Contract must include indemnity provision to ensure that the Consultant has indemnified Tribe for any negligence caused by the Consultant. Indemnity clause should also include a “duty to defend” provision.

- Limitation of Liability- Consultant may try to limit the level of liability, typically up to the value of the contract
  - Generally okay if work is desktop work
  - Generally, not okay if the work is field work.

- Dispute Resolution
  - Sovereign Immunity (to be discussed shortly)
  - Choice of Law
  - Venue

Who Owns the Documents?

- Contracting should clearly define the ownership of documents made during the period of the engagement.
  - Client should own documents and be able to use for any purpose.
  - If work is under order, may have document retention requirements.
  - Return of documents may be required.
- Confidentiality of the Consultant
  - May include provisions that the consultant will not share confidential or sensitive materials in presentations or promotional materials.
- If the Consultant is compelled by a Court to disclose information, include a notice provision to allow Tribe the ability to defend against disclosure.

Should Tribe or Tribal Entity Waive Sovereign Immunity?

- Among the core aspects of sovereignty that tribes possess—subject to congressional action—is the "common-law immunity from suit traditionally enjoyed by sovereign powers.". That immunity applies whether a suit is brought by a State, see, *e.g.,*, or arises from a tribe's commercial activities off Indian lands. *Michigan v. Bay Mills Indian Community* (2014) 572 U.S. 782, 782 [134 S.Ct. 2024, 2027, 188 L.Ed.2d 1071] (internal citations omitted)

- Dispute Resolution: Waiver of sovereign immunity for the *sole purpose* of engaging in dispute resolution.

- Waiver should be limited to disputes arising out of the engagement.

- Alternative Dispute Resolution
  - Mediation
  - Arbitration
  - Setting Liability Limitation as condition of the waiver.

QUESTIONS?

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TRIBAL ENVIRONMENTAL LAW SEMINAR 2024

Effective Use of Environmental Consultants

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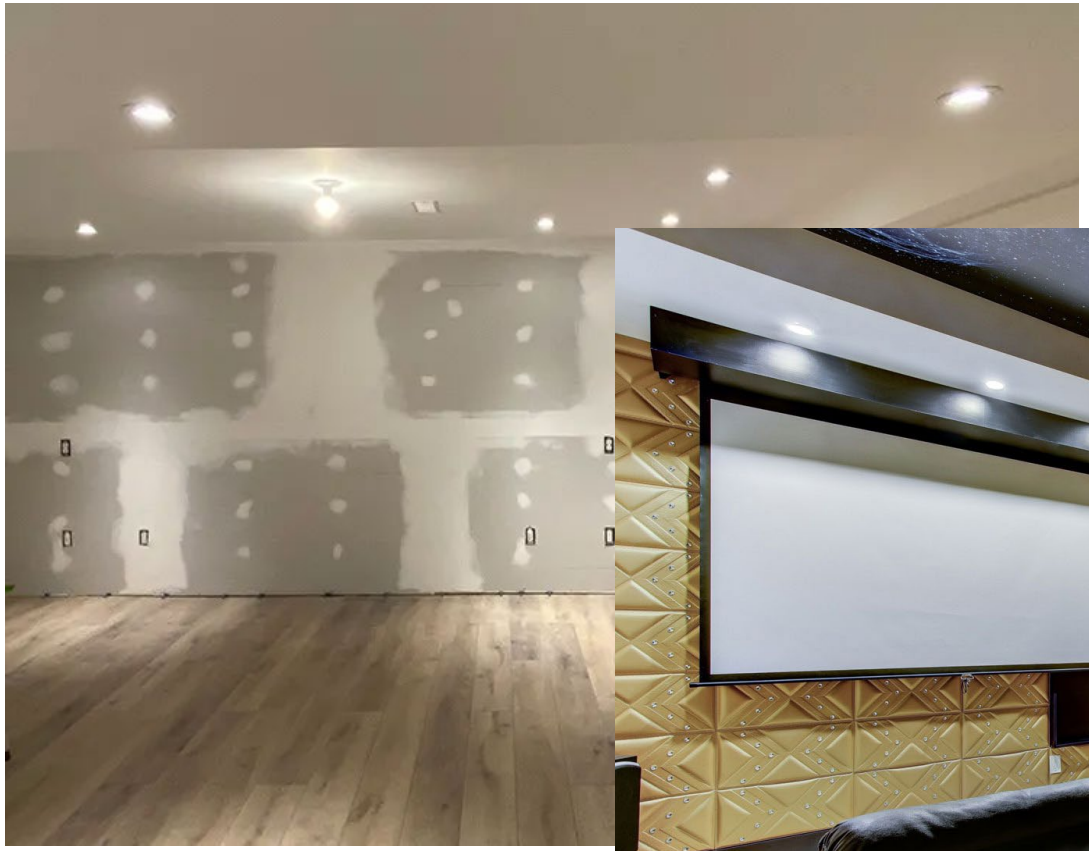
A Project Management Tale….

The Flooded Basement

Your Vision…. Nothing Fancy

And maybe a nice home office….



Every Project Needs Good Project Management!

- What information the environmental consultant needs up front
- How to develop a scope of work
- Effective project management
- Communications
- Budget
- Schedule
- Meetings
- Written Work Products

Avoiding Common Complaints & Pitfalls

- Does not provide status updates
- Puts a lot people on the project
- Deliverables are late
- Work product is not on point
- Cannot communicate technical concepts in layman terms
- Reports are not well written
- Practices too much advocacy

Effective Introduction for Consultants

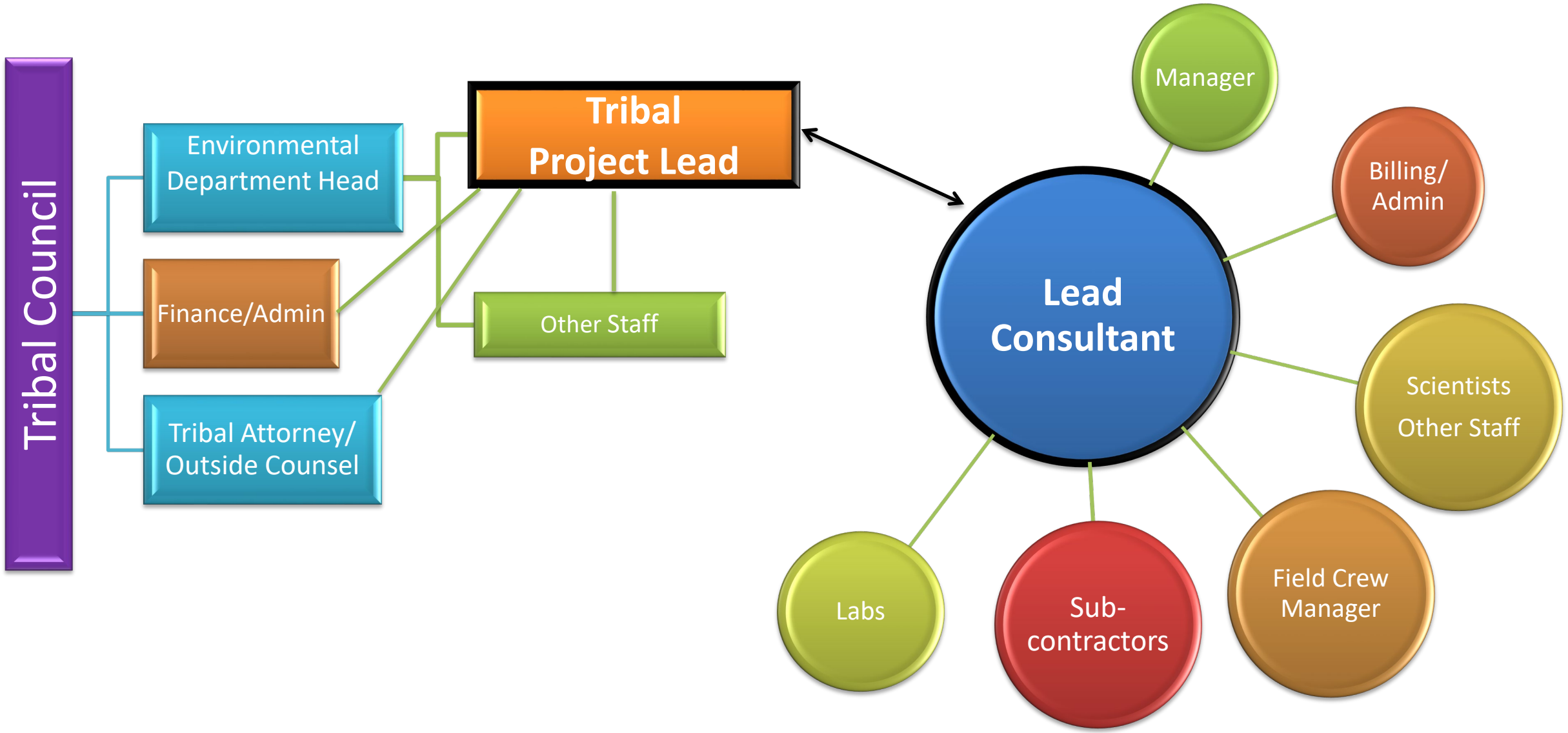
- Help the Consultant understand the project and the playing field
  - What is the project?
  - What is the applicable law?
    - Tribal
    - Federal
    - State
  - Who are the stakeholders
    - Tribe
    - Local governments
    - Non-tribal members
    - Regulators
    - Politicians/Media/Public
  - What are the conflicting points of view?

Define Consultant's Role

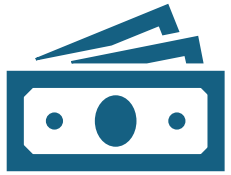
- Perform field work only with limited reporting
- Provide data and information & make recommendations to the Tribe
- Present data and information on behalf of Tribe to stakeholders
- Engage stakeholders on behalf of Tribe - eg Consultation
- Facilitate, coordinate, and build consensus
- Prepare (and defend) an expert report

Effective Project Management

Effective Communications - Make a Plan



Develop Scope of Work with Consultant



Use individual tasks and sub-budgets

Easier for tracking

Consider where the money comes from (Grants, cooperative agreements)

Adequately describe work being performed

Avoid future misunderstandings

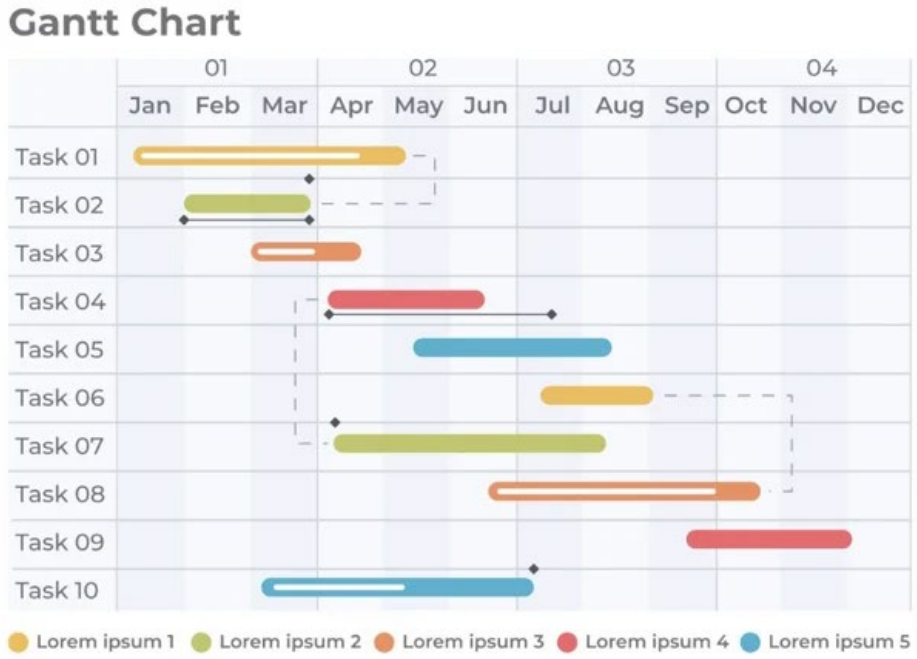
This includes rates and rate increases!

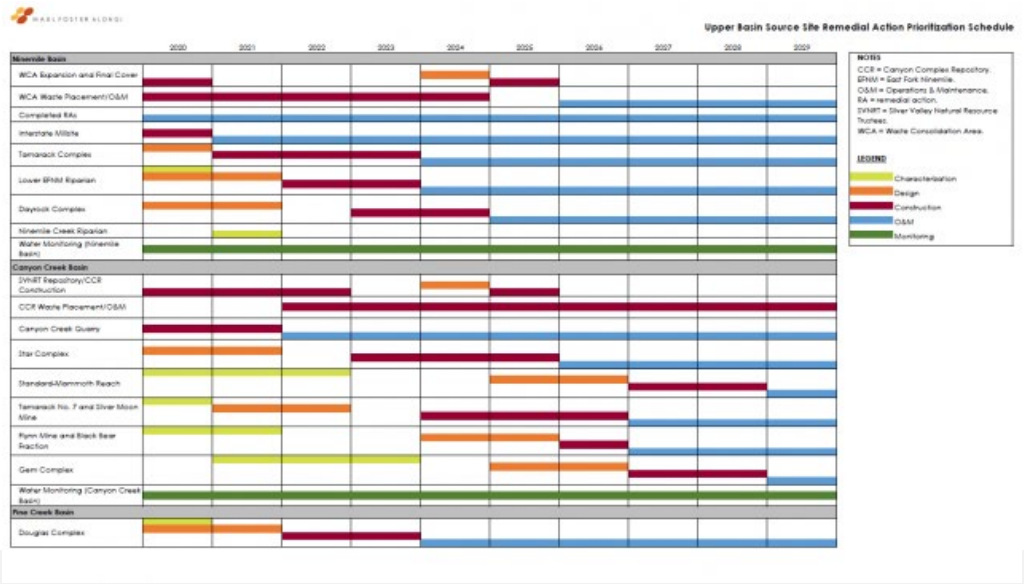
Get all agreements, requests, and changes in writing

Require Tribal approval

Project Schedule

- Gantt Chart vs Simple Table
- Regular updates to schedule
- Adequate time for Tribal review of drafts of deliverables
- Identify items that may need longer turn around times





Budget Tracking & Billing

- Accounting – use of separate matters to track SOW tasks

- Invoice must adequately describe work performed
  - Budget planning
  - Litigation for cost recovery

- Budgeting on fiscal year schedule

- Make sure the consultant knows the budget is tight

Effective Meetings with Consultants

Standing Status Update Meetings

- Set schedule and book in advance
- Review ongoing work
- Review schedule for upcoming work
- Budget update

Topical meetings

- Deep dives into particular topic
- Presentation of findings/work
- Budget meetings

Running Effective Meetings

- Make sure the right people are in the room
- Always have a designate lead for running the meeting
  - Make sure agenda items are covered
  - Keep the meeting moving
  - Identify action items
- Use an agenda
  - Level of detail varies
  - Get input from Team on agenda items
- Prepare meeting summary & action items
  - Review the action items at end of meeting
  - Circulate summary shortly after meeting

Developing Consultant Written Work Products

Pitfalls

- Misses the mark and does answer the question asked
- Hits the mark but covers too much
- Is not tailored for the right audience
- Science is wrong

Best Practices

✓Start with an outline of work product

✓Include a purpose statement or the question the work intends to answer

✓Bullet points of sections and concepts

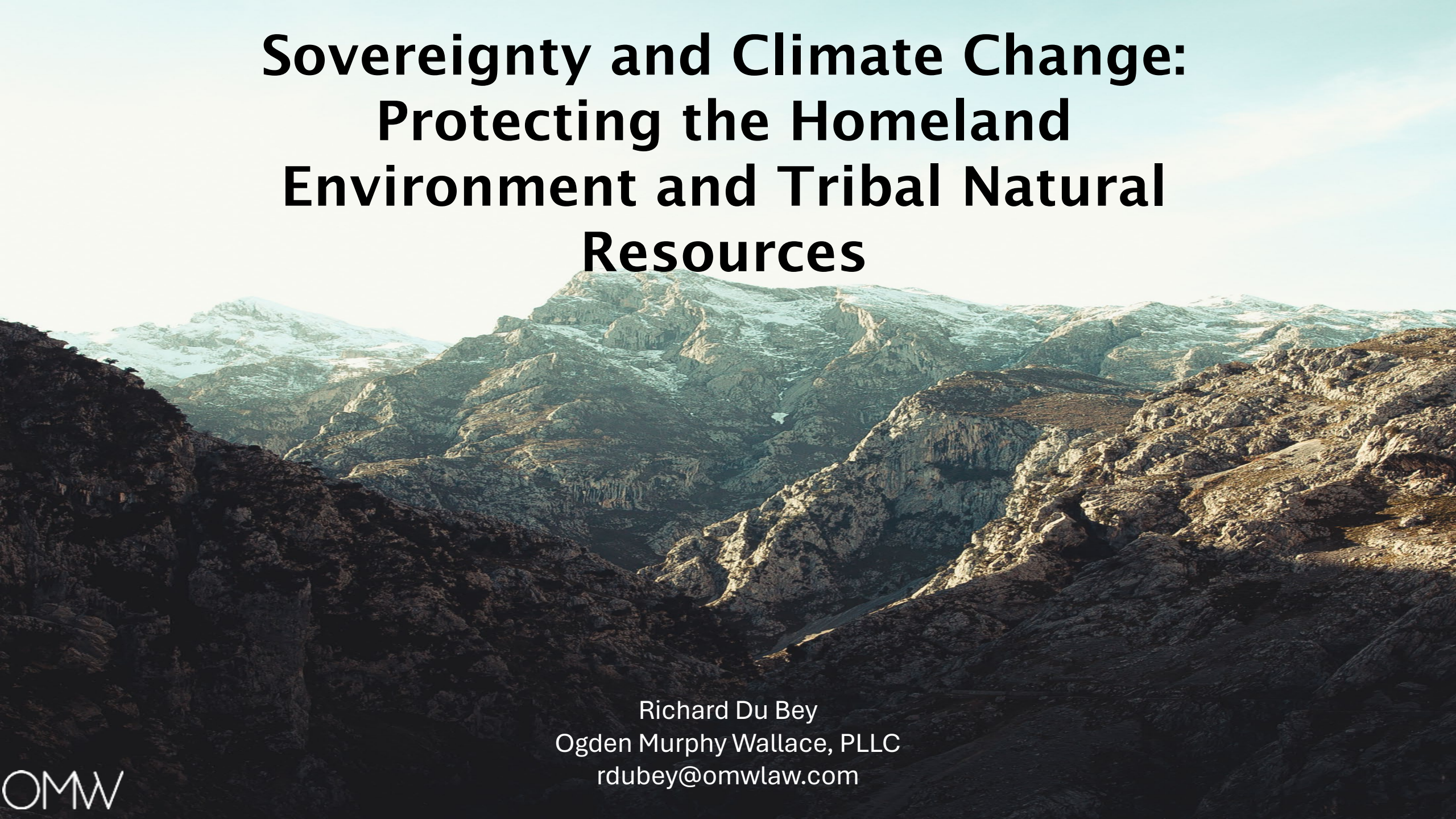
✓Get Team's and Attorney's input up front

Confidentiality of Work Product

- Drafts/Communications marked with confidentiality header, provided by Attorney
  - Confidential Consulting Expert Communication
  - Prepared in anticipation of litigation
  - Subject to joint prosecution agreement
  - Enforcement sensitive/confidential


THANK YOU!
QUESTIONS?

Sovereignty and Climate Change: Protecting the Homeland Environment and Tribal Natural Resources



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OMW

Overview

- How Can Climate Change Impact:
  - The Reservation Environment?
  - Tribal on and off Homeland Natural Resources?
  - Spiritual and Cultural Values?

- What Can Be Done Now to Prepare For/Mitigate These Consequences?

- Exercising Inherent Sovereignty Now To Protect Future Generations

What Authority Do Tribes Have to Protect the Homeland Environment?

- Enact Tribal policies to focus the response
- Identify the most sensitive natural resources and resource habitats and develop pro-active management plans
- Develop Tribal laws to combat climate change
    - Use of civil regulatory jurisdiction
    - Use of contact authority
    - Use of cooperative agreements
        - MN Joint Powers Agreements
- Implement and enforce the more stringent standards now

Key Questions

1. What are the sources of Tribal legal authority?

2. What are the policy reasons for Tribes to develop future focused regulatory programs?

3. When should Tribes move forward with the development of their own baseline groundwater, soil and sediment cleanup, and water quality standards?

4. What are the short and long term risks if Tribes don't?

Tribal Environmental Protection

- Reservations are the remaining homeland of Indian Tribes.
    - Land and water resources are limited
    - Climate change may diminish habitat and availability of resources

- Tribes have reserved environmental quality rights with regard to all on-Reservation natural resources.
    - Treaty rights are recognized by EPA
    - Treaty rights are enforceable against states

- Tribes entitled to the use and enjoyment of their on and off-Reservation natural resource base and rights to harvest, gather, and enjoy such resources and places.

Tribal Environmental Protection

- Tribal natural resource rights and entitlements frequently have significant cultural and economic value to the Tribe and its members.
    - Are cultural/spiritual rights enforceable?
    - State efforts to legislate climate change liability – Vermont

- Protection of Tribal natural resources includes protecting the environmental quality and habitat of such resources.
    - U.S. v. WA-Culvert Case
    - What about the CWA-WQS?
        - EPA rulemaking regarding WQS to protect Tribal Reserved Rights (April 2024)

Off Reservation Treaty Rights
The U.S. v. Washington – "Culverts Case"

- What are the facts?
- How can tribes have a treaty right claim against a state?
- What is an environmental quality Right to habitat protection?

Why a Tribe or Band Should Enact Its Own Cleanup Baseline Standards to Protect the Reservation Environment

- Asserts the Tribe or Band's inherent sovereign powers
- Demonstrates a Tribe or Band's governmental process, self-confidence, and authority
- Enables a Tribe or Band to apply its own values to determine how clean is "clean" (and for what purpose?)
- Preserves post cleanup land use and reuse of the Reservation Homeland

Why a Tribe of Band Should Enact its Own Surface Water and Groundwater Baseline Cleanup Standards

- Important for establishing a baseline from which to measure the impacts of contaminant impact or climate change impacts

- Exercise Tribe or Band's right of self-determination and protects its interests, both on and off the Homeland Reservation (extra-territorial jurisdiction)
    - Clean Air Act – Redesignation to Class 1
    - Clean Water Act – Tribal WQS
    - Treaty protected resource habitat

- What about habitat – will the resource relocate?
    - Discuss new FWS EPA proposed rulemaking – re: native habitat

Civil Regulatory Authority: The Three Sovereigns

U.S. Constitution:
Federal Government

Indian Tribes/Bands

States

Sources of Tribal Civil Regulatory Authority

- Tribe and Bands as property owners
- Powers conferred by Congress through statute
- Retained Inherent sovereignty
- Powers Confirmed by Congress through Treaty

Tribes/Bands as Property Owners

- Concept of the reservation landbase
- Geographic scope of Tribal civil regulatory authority
- Extraterritorial reach of Tribal regulatory programs
- Extraterritorial reach of Tribal treaty power to protect resource habitat

Land Acquisition Policy

- Applicable to all lands (fee and trust) within the exterior boundaries of the Reservation
- Means to acquire fee lands to convert into trust lands and expand the Tribal/Band land base
- Acceptance of land into trust requires compliance with applicable Federal and Tribal law
- Tribal baseline standards are consistent with Federal policy and allow the Tribe to plan for use and post clean up reuse/restoration of the Reservation Homeland

Retained Inherent Sovereignty

- To regulate the activities of nonmembers who have entered into *consensual relationships* through commercial dealing, contracts, leases, or other arrangements
  - Agreed orders
  - Cooperative agreements
  - Joint power agreements

- To exercise civil authority over conduct of nonmembers on the Reservation that directly effects the Tribe's *health, welfare, political integrity or economic security*
  - Tribal Hazardous Substance ordinances
  - Tribal WQS
  - Tribal groundwater standards
  - Tribal sensitive habitat ordinances

State Authority in Indian Country

"Congress has also acted consistently upon the assumption that the States have no power to regulate the affairs of Indians on a reservation."

Williams v. Lee, 358 U.S. 217, 220 (1959)

(emphasis added)

Local Jurisdiction

- County may not assert land use jurisdiction over land within Indian reservation owned in fee simply by registered members of tribe

  Gobin v. Snohomish County, 304 F. 3d 909 (9th Cir. 2002), *cert. denied*, 538 U.S. 908 (2003) (emphasis added)

  - Is establishing baseline environmental quality standards for the Reservation Homeland really zoning? Or, is it the complete opposite?
  - Has climate change expanded the scope of Tribal land use authority?
  - If so, how?

EPA Recognition of Tribal Treaty Rights Under the CWA

- EPA WQS regulatory revisions to protect Tribal reserved rights (89 Federal Register 35717-35748 (May 2, 2024))
- This final rule is effective as of June 3, 2024
- The purpose of the new WQS rule is to require states establishing or amending their WQS, to consider Tribal reserved rights in those source waters subject to the state WQS
- How will states be informed about Tribal resource rights?
- How do Tribes participate in this process?

Tribal Reserved Rights

- The EPA rule protects Tribal interests and provides Tribes with an important tool to protect Tribal treaty protected aquatic resources against climate change
- How strong is EPA's administrative record?
- Does EPA have the authority to recognize Tribal treaty, executive order, and statutory rights?
- Lawsuit filed against EPA on May 28, 2024, by Idaho, North Dakota, Alaska, Iowa, Nebraska, South Carolina, South Dakota, and Wyoming seeking to invalidate the EPA WQS rule to protect Tribal reserved rights.
- What can/should Tribes do?

All Roads Lead to Tribal Laws Establishing Baseline Soil, Sediment, Surface, and Groundwater Quality Standards

- Whether the Tribe is acting in its capacity as a property owner;
- Asserting its civil regulatory authority;
- Working in cooperation with EPA to implement remedial measures under CERCLA; or
- Implementing the 401 certification process under the CWA

Summary

- Adopting future focused Tribal Policies and regulatory standards in response to climate change:

  - ❑Are and exercise of Tribe's sovereign authority and right of self-determination
  - ❑Demonstrate a Tribe's competence and authority
  - ❑Enhance a Tribe's authority to determine the baseline conditions of natural resources and habitat within the Reservation Homeland
  - ❑Impose regulatory measures to mitigate climate change impacts to natural resources
  - ❑May enable Tribes to enact strict liability climate change impact laws to enforce against responsible parties (the Vermont example).

Conclusions

1. Because of climate change, the very well being of the Tribe and the future health and welfare of its members is dependent on the vision of its leaders and their ability to put policies and laws they put in place that anticipate and respond to the challenges of climate change

2. Establishing multimedia – resource sensitive regulatory baselines can help protect habitat, resources, and the overall quality of the Reservation Environment

3. The body of Tribal law enacted by future thinking Tribal leaders - can go a long way toward combating the impacts of climate change

Thank you!

Questions?

HGL

Tribal Water Quality Standards and Fish Consumption Rates

HGL CONTRIBUTORS

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Chief Engineer and Senior Risk Assessor

Ryan Sullivan

Senior Risk Assessor

AGENDA

1. Regulatory Overview
2. Tribes as States
3. Methodology – Calculation of Criteria for Human Consumption of Fish and Shellfish
4. Fish Consumption Studies

1

REGULATORY OVERVIEW

Clean Water Act

33 United States (U.S.) Code §1251 et seq.

Objective: “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters”

Provides basis for regulation of:

- **Discharges to waters of the U.S.**
- **Water quality standards**

Clean Water Act (cont.)

40 Code of Federal Regulations (CFR) 131

Outlines how water quality standards are to be developed, reviewed, revised, and approved

- "A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria that protect the designated uses."

Additional procedures for the Great Lakes provided in 40 CFR 132

40 CFR 131

Requirements for water quality standards

- Designated uses for surface water
  - Must include fishable and swimmable where attainable (“protection and propagation of fish, shellfish, and wildlife, and provide for recreation in and on the water”)
  - Other uses include (but not limited to) public water supply, agriculture, industry, navigation, hydroelectric power, groundwater recharge, aquifer protection, coral reef protection, marinas

Waste transport and assimilation are not acceptable uses

40 CFR 131 (cont.)

Requirements for water quality standards (cont.)

- Water quality criteria that will protect the designated uses
- Method and scientific basis underlying water quality standards
- Water quality criteria may be numerical or narrative
- Antidegradation policy

April 2024 Rulemaking

U.S. Environmental Protection Agency (EPA) and states to consider applicable Tribal reserved rights in establishing water quality standards

- Tribe to assert reserved right in writing to state and EPA
- States to consider reserved rights in designated water uses and future exercise of these rights and establish water quality standards consistent with designated uses
- EPA to assist with evaluating Tribal reserved rights, review water quality standards, and initiate Tribal consultation process

Key Takeaway

Tribes have opportunity to ensure their traditional activities related to surface water (e.g., fishing, wild rice cultivation) are incorporated into water quality standards.

2

TRIBES AS STATES

Clean Water Act

Section 518(e) authorizes EPA to treat Tribes equivalent to states

To qualify a Tribe must:

- Be federally recognized
- Have a governing body with substantial government duties and powers
- Have authority to manage and protect water resources
- Be capable of performing the program functions

Tribes as States

- **84 Tribes eligible to develop water quality standards**
- **49 Tribes have approved water quality standards**

EPA website contains

- Template application form for Tribes to seek “Tribe as state” status
- Template form for development of water quality standards

Key Takeaway

- Tribes can develop water quality standards specific to their needs and apply these standards to waters within their reservations

3

CALCULATION METHODOLOGY

Calculation Methodology

Federal ambient water quality criteria (AWQC)

- Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (EPA, 2000)
- Separate values for fish consumption only and fish consumption combined with drinking surface water
- Authorized Tribes may use federal criteria as guidance for their own water quality standards

Calculation Methodology (cont.)

Separate equations to address cancer risk and non-cancer effects

Equation inputs

- Toxicity values (reference dose for non-carcinogens, risk-specific dose for carcinogens)
- Body weight (default = 80 kilograms [kg])
- Drinking water ingestion rate (default = 2.4 liters/day)

Calculation Methodology (cont.)

Equation inputs (cont.)

- Relative source contribution
  - Accounts for exposure to pollutant from other sources
  - Applicable to non-carcinogens and select carcinogens
- Bioaccumulation factors – spreadsheet available on EPA website
- Fish ingestion rate

Calculation Methodology (cont.)

Fish ingestion rate

- Average mass of fish consumed per day
- Federal AWQC based on ingestion rate of 0.022 kg/day
  - 90th percentile for adults (> 21 years), combined freshwater and estuarine finfish and shellfish
  - Corresponds to 0.77 ounces per day or approximately 5 ounces per week
  - Substantially lower than traditional Tribal fish consumption rates

Online Calculator

Online EPA calculator for Tribal water quality standards

- Can adjust target cancer risk
  - Default is 1E-06
  - In online calculation, can change to 1E-07 or 1E-05
- Alternate fish ingestion rates
  - Subsistence fishers (0.1424 kg/day)
  - Half of recommended daily protein intake rate (0.16 kg/day)
  - Rate from Columbia River Inter-Tribal Fish Commission Survey (0.175 kg/day)
  - Custom

Key Takeaways

Optimal way for Tribes to ensure water quality standards address their needs is to adjust fish consumption rate and/or target cancer risk

- 1E-06 risk is commonly used by EPA to screen data
- Some states have adopted 1E-05 as target
- 1E-07 is most conservative option in calculator

Site-specific bioaccumulation factors can be difficult, expensive, and time-consuming to develop

4

FISH CONSUMPTION STUDIES

Hierarchy of Sources

EPA identified the following hierarchy for sources of fish consumption rates

- Local data (conduct own study)
- Data reflecting similar geography/population groups (use existing study)
- Data from national surveys
- EPA default consumption rates

National Surveys

Estimated Fish Consumption Rates for the U.S. Population and Selected Subpopulations (EPA, 2014)

- Data from National Health and Nutrition Examination Survey (NHANES) 2003 – 2010
- Assessed consumption rate across different types of fish
  - Total fish, finfish, shellfish
  - Marine, freshwater, estuarine
  - Trophic level 2, 3, and 4

National Surveys (cont.)

EPA, 2014 (cont.)

- Percentile consumption rates provided for age, gender, race/ethnicity, income, and geographic area
  - Although not specific to Tribes, Tribes could select ingestion rates from tables in this report based on the Tribe's geographic region and other considerations
  - Depending on Tribe's situation, selection of ingestion rates from EPA (2014) might not be sufficiently protective

Existing Tribal Studies

Columbia River Inter-Tribal Fish Commission Survey

- Questionnaire survey occurred in 1991 – 1992
- Four Tribes participated (Yakama, Umatilla, Nez Perce, Warm Springs)
  - More than 500 Tribal members responded
  - Targeted individuals 18 years and older
  - Respondents provided information on themselves and, if applicable, one child in the same household who was 5 years or younger

Existing Tribal Studies (cont.)

Columbia River Inter-Tribal Fish Commission Survey (cont.)

- Assessed fish consumption rates by age and gender
- Evaluated consumption by type of fish and part of fish (e.g., fillet, skin, bones, etc.)
- Considered seasonal variation in consumption rates
- Identified preferred fishing locations

Existing Tribal Studies (cont.)

Exposure Factors Handbook (EPA, 2011)

- Table 10-6 summarizes several Tribal studies
  - 94 Alaskan communities
  - Chippewa in Wisconsin
  - Florida
  - Minnesota
  - Mohawk in New York and Canada
  - North Dakota
  - Several studies in Washington state

Questions to Consider with Use of Existing Studies

- Is the existing study for a Tribe that shares similar geography and fishing traditions?
- Did the study consider the same subpopulations of interest?
- How did the study identify and interview respondents?
- How did the study address statistical outliers?
- How involved were Tribal leaders in the study?

Fish Consumption Survey Guidance

Guidance for Conducting Fish Consumption Surveys (EPA, 2016)

- Describes how to plan and conduct fish consumption surveys for estimating long-term average intake
- Updates prior EPA guidance from 1998 on conducting fish and wildlife consumption surveys

Fish Consumption Survey Guidance (cont.)

EPA, 2016 (cont.)

- Outlines five steps for survey design and development
  1. Define survey objectives
  2. Identify information inputs
  3. Decide survey approach and sample design
  4. Develop questionnaire
  5. Consider implementation issues

Fish Consumption Survey Guidance (cont.)

EPA, 2016 (cont.)

- Includes chapter on assessing suppression of fish consumption and estimating historical or heritage consumption rates
  - For water quality standards to allow for traditional fishing, then unsuppressed fish consumption rates must be estimated
  - Identifies examples of heritage consumption rate studies for several Tribes

Key Takeaways

New fish consumption study

- Provides Tribe-specific data tailored to meet Tribe's objectives
- Requires time and money

Existing fish consumption studies

- Provide defensible fish consumption rates for calculation of water quality standards
- Low-cost approach
- Might not be appropriate for a Tribe's situation and/or concerns

SUMMARY

Summary

Federal regulations

- States and EPA to consider Tribal reserved rights in development of water quality standards
- Once granted “Tribe as state” status, Tribes can develop their own water quality standards

Fish consumption rate is primary variable in calculation of water quality standards for fish consumption

- Existing studies are inexpensive sources of consumption rates
- May need Tribe-specific consumption rate study depending on Tribe’s situation and concerns

Thank You

Restoring the Environment.
Protecting Our Future.